

CENTRAL LINK LIGHT RAIL TRANSIT PROJECT

ENVIRONMENTAL ASSESSMENT AIRPORT LINK



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL TRANSIT ADMINISTRATION

With:



MAY 2005





May 26, 2005

Dear Recipient:

The U.S. Department of Transportation Federal Transit Administration (FTA), Sound Transit (the Central Puget Sound Regional Transit Authority), and the Port of Seattle have completed preparation of an Environmental Assessment (EA) on the proposed light rail extension to the Sea-Tac Airport and City of SeaTac known as Airport Link. Airport Link would operate in an exclusive right-of-way between the Tukwila International Boulevard Station in Tukwila, which is part of the Initial Segment of Central Link currently under construction, and Sea-Tac Airport and, ultimately, S. 200th Street in SeaTac. The project is part of the *Sound Move* program for regional high capacity transportation.

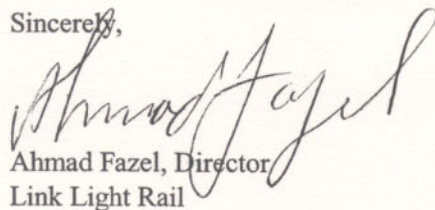
The EA was prepared pursuant to the National Environmental Policy Act (42 U.S.C. 4321 to 4370e) and also serves as an addendum under the State Environmental Policy Act (Ch. 43.21C RCW). This EA provides updated environmental information and analyzes changes to environmental effects that could occur with the currently proposed project revisions. It was prepared to inform the public, agencies and decision makers about the environmental consequences of building and operating the light rail system extension to the Airport and SeaTac. The document also discusses mitigation measures to reduce or avoid impacts.

The Sound Transit Board will consider the EA and other information before selecting a project to be built. FTA is then expected to issue a record of decision.

Please see Chapter 1 for more information on where to review or how to obtain copies of this document and for information on the public hearing and commenting.

For further information about this EA, please call Lauren Swift, Environmental Planner, or Sound Transit reception at (206) 398-5000.

Sincerely,


Ahmad Fazel, Director
Link Light Rail

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**CENTRAL LINK LIGHT RAIL TRANSIT PROJECT
AIRPORT LINK**


ENVIRONMENTAL ASSESSMENT

Submitted pursuant to
the National Environmental Policy Act (42 U.S.C. 4322(2)(c)) and 23CFR Part 771

by the
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL TRANSIT ADMINISTRATION
and
pursuant to the State Environmental Policy Act (SEPA)(Ch. 43.21.C RCW)
by the
CENTRAL PUGET SOUND REGIONAL TRANSIT AUTHORITY
(Sound Transit)
and
PORT OF SEATTLE

In cooperation with
FEDERAL AVIATION ADMINISTRATION
FEDERAL HIGHWAY ADMINISTRATION
WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
CITY OF TUKWILA
CITY OF SEATAC
KING COUNTY

5/13/05
Date of Approval


Regional Administrator
For Federal Transit Administration

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This document provides additional environmental information for the SeaTac (Airport Link) segment of the Central Link Light Rail project, which was previously evaluated in a 1999 Final Environmental Impact Statement. Airport Link would connect a S. 154th Street Station to a Seattle-Tacoma International Airport Station and ultimately to a station and park-and-ride at S. 200th Street. The extension would provide direct light rail service to a station at Sea-Tac Airport. Construction of Airport Link, at least to the Airport/SeaTac Station, is planned to begin in 2006 with operations beginning as early as 2009. A timetable to extend from the airport to S. 200th Street has not been determined. Additional copies of this document can be obtained by contacting Sound Transit, Union Station, 401 S. Jackson Street, Seattle, WA 98104-2826, (206) 398-5000.

Comments on this environmental assessment are requested by June 27, 2005 and should be sent to:

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Acronyms

CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
dBA	A-weighted decibels
EA	Environmental Assessment
EB	eastbound
Ecology	Washington State Department of Ecology
EIS	Environmental Impact Statement
EPF	essential public facility
FAA	Federal Aviation Administration
FGTS	Freight and Goods Transportation System
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HCT	High Capacity Transit
HOV	high-occupancy vehicle
ITE	Institute of Transportation Engineers
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
L_{max}	maximum sound level
LOS	level of service
mph	miles per hour
MTCA	Model Toxics Control Act
NAAQS	National Ambient Air Quality Standards
NB	northbound
NEAT	North End Airport Terminal
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NO_x	oxides of nitrogen
PGIS	pollutant-generating impervious surface
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
ppm	parts per million
PSRC	Puget Sound Regional Council
RCF	Rental Car Facility
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
RMS	root-mean-square
SB	southbound
SEPA	State Environmental Policy Act
SFR	single-family residence
SIP	State Implementation Plan
SR	State Route
TSCA	Toxic Substances Control Act
U.S. EPA	United States Environmental Protection Agency

Acronyms (continued)

v/c ratio	volume-to-capacity ratio
VdB	vibration decibels
VOC	volatile organic compound
VHT	vehicle hours traveled
VMT	vehicle miles traveled
WAC	Washington Administrative Code
WB	westbound
WCAA	Washington Clean Air Act
WSDOT	Washington State Department of Transportation
YOE	year of expenditure

Anticipated Permits and Approvals

Anticipated permits and approvals for the Airport Link project include the following:

Federal

Section 106 and Section 4(f) Review: Programmatic Agreement

Clean Water Act, Section 404

Federal Endangered Species Act Review

Form 7460 Construction Noise

Airport Layout Plan

Federal Transit Administration of the U.S. Department of Transportation, U.S. Department of the Interior, Advisory Council on Historic Preservation

U.S. Army Corps of Engineers

U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration Fisheries

Federal Aviation Administration

Federal Aviation Administration

State and County

Public Utility Commission Permits

Section 106 Review: Programmatic Agreement

National Pollutant Discharge Elimination System Stormwater Discharge Permit

Underground Storage Tank Notification Requirement

Water Quality Certification: Section 401

Air Space Lease: Interstate or State Routes

Washington Public Utility Commission

Washington State Office of Archaeology and Historic Preservation

Washington State Department of Ecology

Washington State Department of Ecology

Washington State Department of Ecology

Washington State Department of Transportation

Cities

Conditional Use Permits

Construction Permits

Right-of-Way Permit or Franchise for Use of City/County Right-of-Way

Environmental Critical Areas - Sensitive Areas Review

Hauling and Dumping Permits

Noise Variance

Design Review

City of SeaTac

City of SeaTac, Tukwila and King County

City of SeaTac, Tukwila, and King County

City of SeaTac and King County

City of SeaTac, Tukwila, and King County

City of SeaTac

City of SeaTac

Other

Various Approvals: Planning, Design, and Arts Commissions

Possible Modification of Major Institution Master Plan(s)

Access Easements: Elevated and Subterranean

Notification of Intent to Perform Demolition or Asbestos Removal

Pipeline and Utility Crossing: Permits

Utility Approvals: Easements and Use Agreements

City of SeaTac, King County, and the Port of Seattle

Port of Seattle

Landowners

Puget Sound Clean Air Agency

Utility Providers

Utility Providers

S. Summary

This Airport Link Environmental Assessment (EA) discusses the environmental effects of extending a modified route for light rail from S. 154th Street in Tukwila, Washington to Seattle-Tacoma International Airport and to S. 200th Street in SeaTac. Construction has started on the Initial Segment of the Central Link light rail project from downtown Seattle to S. 154th Street in Tukwila. Airport Link would modify the route in SeaTac for the Central Link light rail, previously selected by the Sound Transit Board in November 1999.

This EA is being prepared in compliance with the requirements of the National Environmental Policy Act (NEPA) and provides additional information on changes in project effects compared to the 1999 Central Link Light Rail Final Environmental Impact Statement (EIS). For the purposes of State Environmental Policy Act (SEPA) compliance, this document also serves as an addendum to the 1999 Central Link Final EIS. Since the Port of Seattle will be constructing portions of the related roadway modifications for the light rail segment in the airport vicinity and is the lead agency for SEPA actions on Port property, the Port of Seattle is a SEPA co-lead agency along with Sound Transit. The Federal Transit Administration (FTA) is the lead agency under NEPA.

S.1 PURPOSE AND NEED

The Purpose and Need for the Central Link light rail project, which includes Airport Link, was described in the 1999 Central Link Final EIS and the Tukwila Final Supplemental EIS. The purpose of the Central Link project is to construct and operate an electric light rail system connecting the region's major activity centers. Airport Link would connect light rail directly to the Seattle-Tacoma International Airport, SeaTac City Center, and ultimately would extend south to a station and park-and-ride at S. 200th Street.

The revised project that is proposed for Airport Link was identified by Sound Transit because of its ability to meet the Central Link light rail project's goals and objectives, to support the Port of Seattle's goals to develop the airport to meet the future aviation needs of the region, and to provide alternate travel means for airport passengers and workers.

S.2 PROJECT DESCRIPTION

Airport Link is the light rail extension and related airport internal circulation modifications for a light rail segment from Tukwila, Washington to Sea-Tac Airport and the city of SeaTac. The Airport Link extension would start at the Tukwila International Boulevard Station in Tukwila, which is being developed as part of the Initial Segment. The Initial Segment is the 14-mile light rail line currently under construction between downtown Seattle and the Tukwila International Boulevard Station (Figure S-1). The Airport Link would extend from the Tukwila International Boulevard Station south to the Airport/SeaTac Station and then to a terminus and park-and-ride station at S. 200th Street (Figure S-2).

To provide the space needed for light rail guideways and the station, the Airport Link project would need to revise portions of the terminal roadway system. The existing northbound North Airport Expressway would be realigned to the east and construction of an airfield access tunnel would be reconstructed to provide effective circulation and access to the airport terminal. This would require a five-lane configuration to minimize the potential for traffic operations to be affected by queues from SR 518. In addition, a short segment of the southbound North Airport Expressway north of S. 170th Street would be realigned. This realignment would provide an adjacent envelope for construction of the light rail alignment while also conserving areas that could support future development of the airport. The relocation of the North Airport Expressway includes two bridges, embankment, retaining walls, new and relocated utilities, relocation of S. 170th Street, and construction of an airfield access tunnel. The northern parking garage entrance and exit



SOUNDTRANSIT

**Figure S-1
Central Link Light Rail Project
with Airport Link, Initial
Segment, and North Link**

Initial Segment Stations

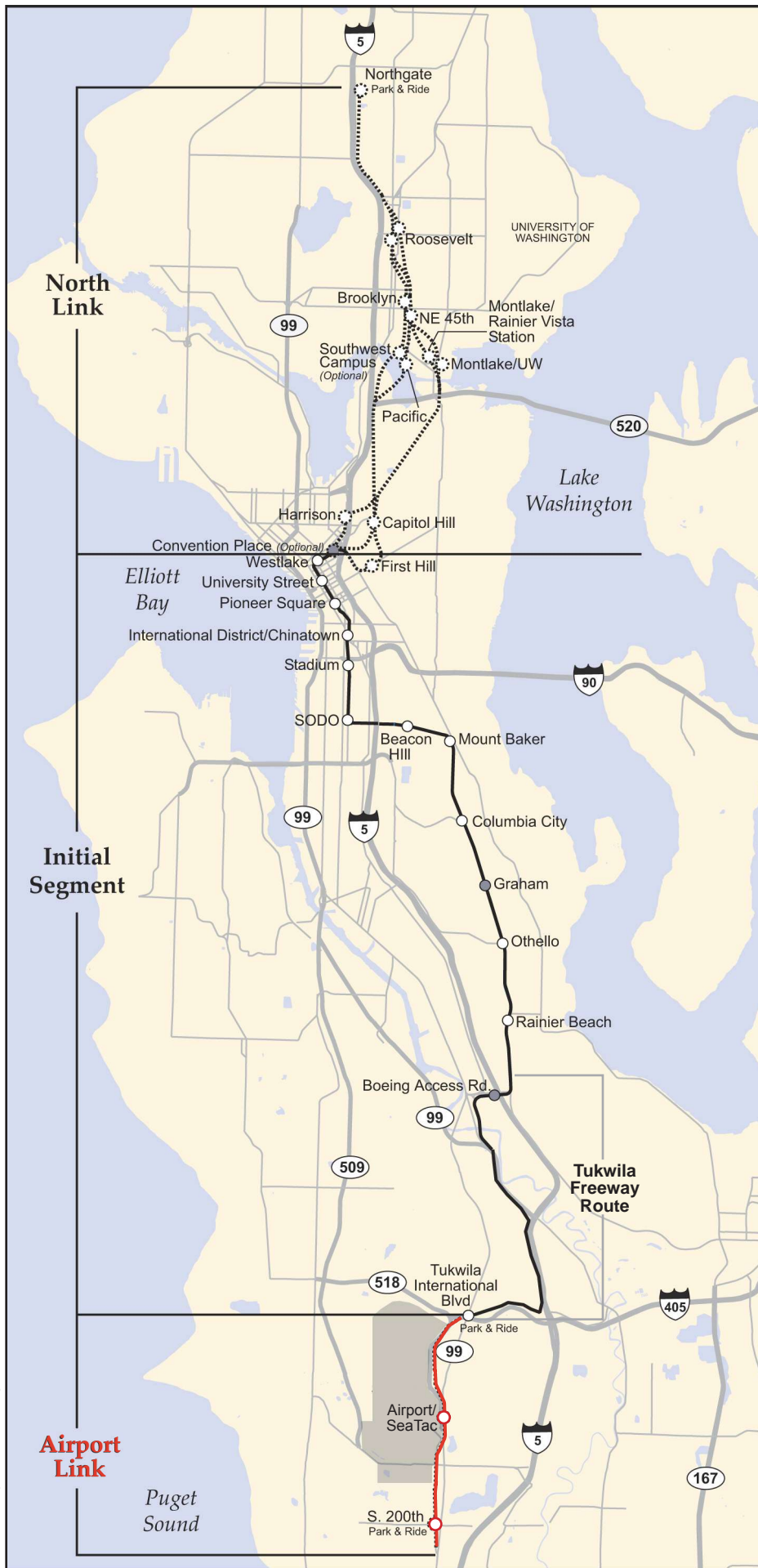
Westlake[□]
University Street[□]
Pioneer Square[□]
International District^{3□}
Royal Brougham⁴
Lander[□]
Beacon Hill[□]

McClellan[□]
Edmunds[□]
Graham⁴
Othello[□]
Henderson[□]

Boeing Access Road^{1,3,4□}
Tukwila International Blvd.¹

Airport Link Stations

Airport/SeaTac
S. 200th¹



¹ Includes Park-and-Ride

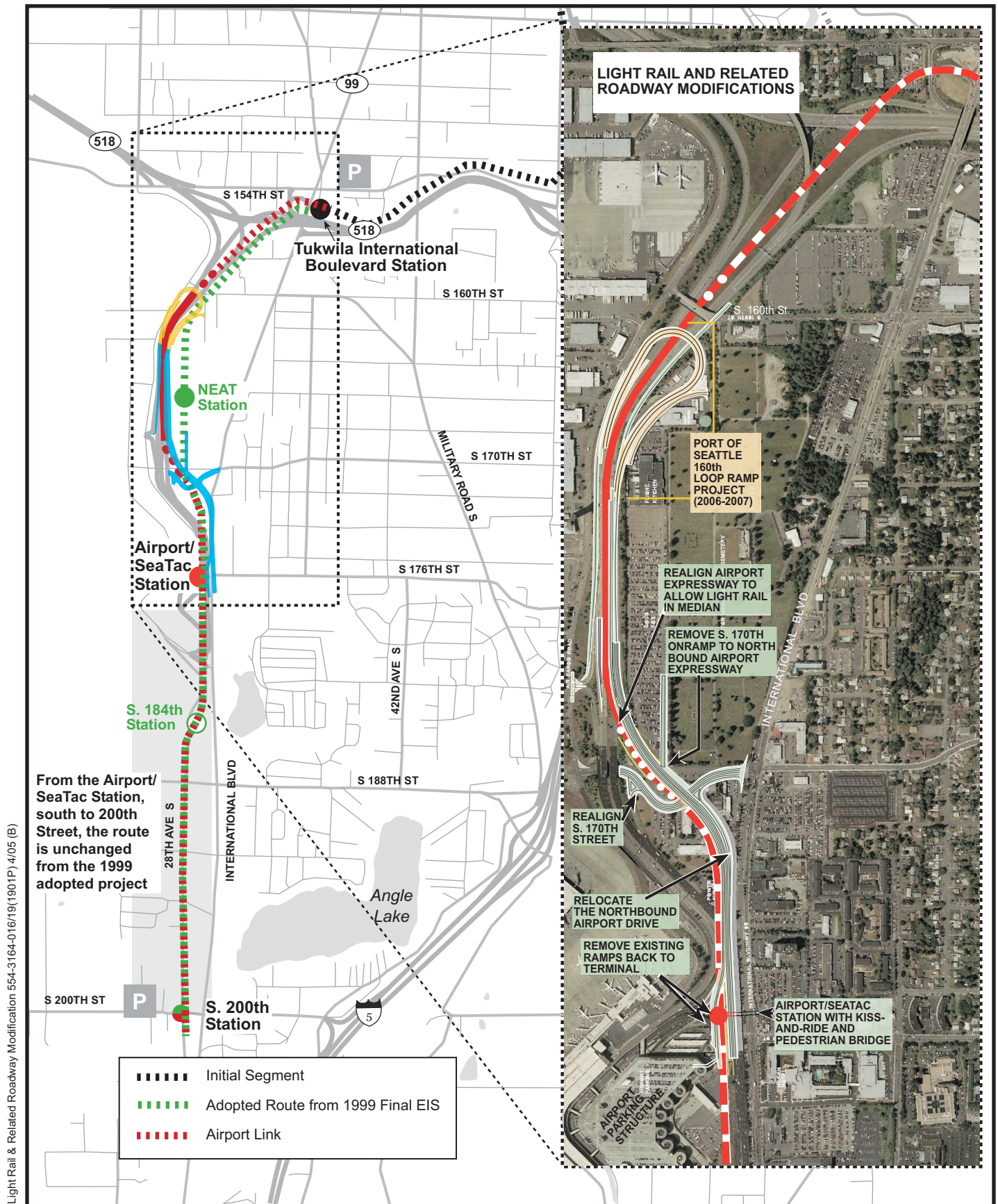
² Optional station

³ Light Rail/Commuter rail transfer

⁴ Deferred station

- Airport Link
- Initial Link light rail route and stations
- Deferred or optional stations
- ⋯○⋯ Future Phase 1 route and station options





Light Rail & Related Roadway Modification 554-3164-016/19(1901P) 4/05 (B)

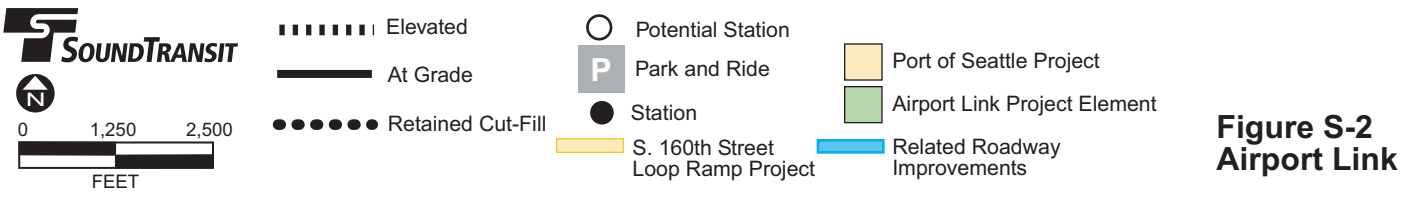


Figure S-2
Airport Link

must also be relocated and the return-to-terminal ramps from the upper and lower airport drives would be closed and demolished. These activities would be staged to maintain active traffic throughout construction. S. 170th Street would also be realigned to accommodate light rail and the revised northbound North Airport Expressway. Realigning S. 170th Street would require a new off-ramp from the northbound expressway onto S. 170th Street, replacing the existing off-ramp. The existing on-ramp from S. 170th Street to the northbound expressway would be removed.

Together with the Port of Seattle, Sound Transit has developed the modified route to the airport to accommodate airport needs and support the SeaTac urban center. Construction of Airport Link to the Airport/SeaTac Station is planned to start in 2006, with operations beginning in December 2009. A timetable for the additional plan to extend the line from the airport to S. 200th Street has not been determined. The Initial Segment anticipates service beginning in 2009, approximately 6 months prior to Airport Link.

S.3 SUMMARY COMPARISON OF ENVIRONMENTAL EFFECTS

Table S-1 provides an updated summary of the overall environmental effects of the Airport Link alternative.

Transportation

In comparison with the original project analysis for the year 2020, the total daily system boardings and boardings at the Airport/SeaTac and S. 200th Stations for Airport Link in the year 2030 would be similar.

Traffic is expected to increase over existing conditions with or without Airport Link. However, vehicle trips associated with Airport Link would be within the range described in the 1999 Central Link Final EIS. Airport Link would increase the delays at one intersection, International Boulevard and S. 200th Street, because of the increase in trips to the station and park-and-ride. This intersection was also affected by the original project and was previously addressed in the 1999 Central Link Final EIS.

Some off-street private and public parking would be impacted by Airport Link due to right of way needs. Impacts would be similar to those in the original project. There is also the potential for hide-and-ride parking near stations. Measures are available to minimize the use of on- or off-street parking by transit patrons, and park-and-rides would be provided at the Tukwila International Boulevard and S. 200th Stations. Mitigation is also available to discourage airport passengers and employees from using park-and-rides inappropriately.

Land Use and Economics

The light rail plans are consistent with the local, regional, and airport plans. The Airport Link project is similar to the original project in that the stations would have minimal land use and economic impacts.

Acquisitions, Displacements, and Relocations

Airport Link would fully acquire 16 properties compared to 14 for the original project. Of the 16 properties acquired for Airport Link, 4 properties are vacant or undeveloped and 6 are surface parking lots. Airport Link would partially acquire 19 properties, and the original project would have partially acquired 47. The affected parcels include airport parking areas at S. 200th Street, which could be leased or developed for joint airport/station parking. Sound Transit will provide for compensation and relocation assistance to qualified property owners, businesses, and residents, in accordance with federal and state law and Sound Transit policies.

Neighborhoods

As with the original project, neighborhood quality impacts for Airport Link would be low or low/moderate on all neighborhoods, and nearby neighborhoods would experience the most improved transit accessibility.

**Table S-1
Airport Link Summary of Impacts**

	Airport Link	Original Project
Total daily system boardings	165,500 ¹ (2030)	148,900 (2020)
Airport/SeaTac Station daily boardings	4,000 (2030)	3,000 (2020)
S. 200th Station daily boardings	4,500 (2030)	2,300 (2020)
Intersection impacts ²	1	4-7
Parking: displaced off-street spaces	166 to 260	226
Parking: on-street spaces displaced	40	40
Parking: spillover potential ³	Low	Low
Freight impacts	Low	Low to Medium
Full (partial) property acquisitions	16 (20)	14 (47)
Residential units acquired	3	2
Land use: state/regional and local plan consistency	Medium-High	Medium-High
Land use: direct impacts	Low	Medium-Low
Businesses/employees displaced	10/112 ⁴	5/15
Neighborhoods	Low to Low/Moderate	Low to Low/Moderate
Visual resources impacts	Low	Low
Air quality impacts	No Change	No Change
Light rail noise impacted buildings/units (with mitigation)	4 homes/6 apartment units (0)	0 (0)
Traffic noise impacted buildings (with mitigation)	2 (0) ⁵	0 (0) ⁴
Vibration impacted buildings (with mitigation)	0 (0)	0 (0)
Wetlands impacts	Low	Low
Wildlife and vegetation impacts	Low	Low
Fisheries impacts	Low	Low
Water resources	Low	Low
Energy impacts	None	None
Geology and soils impacts	None	None
Hazardous material sites of highest concern	25	25 ⁶
Electromagnetic fields impacts	None	None
Public services impacts	Low	Low
Utilities impacts	Low	Low
Historic and archaeological resource impacts	None to Low	None to Low
Parkland resource impacts	None	None
Construction impacts	Low to Moderate	Low to Moderate

Note: This table reflects design information as of November 2004, PSTC (Sound Transit's light rail engineering consultants) for Sound Transit.

¹ Boardings include the Central Link Initial Segment and North Link to Northgate

² Intersection impacts reflect the number of intersections degrading from No-Build Levels of Service (LOS) A through E to LOS F with light rail in 2020 or 2030 or where light rail increases the average delay by greater than 20 percent at intersections with LOS E or worse.

³ Spillover potential is the likelihood of patrons to park in on-street stalls in neighborhood or business areas.

⁴ This number does not include Radisson employees because of the lease agreement.

⁵ The original project would have the same amount of traffic noise impacts as Airport Link with the current S. 200th Station configuration; however, no impacts are anticipated with mitigation.

⁶ Sites of highest concern, including documented and potential releases, along the original project route were recounted with 2004 data.

Visual Resources and Aesthetics

Along Airport Link, adverse visual impacts would largely be avoided. North of the airport, much of the Airport Link alignment would be in the median of the North Airport Expressway. With the original project, the alignment would have passed along the west side of Washington Memorial Park Cemetery. Some visible changes would occur where the elevated structure and Airport/SeaTac Station pedestrian overpass are located; however, the low degree of contrast with the existing environment and minor impacts to views would have minimal effects.

Air Quality

As with the original project, no air quality impacts for Airport Link would be expected. The project would not change air quality plan conformity determinations, using either transportation or general conformity methods to consider impacts.

Noise and Vibration

Without mitigation, Airport Link could cause noise impacts at approximately six apartment units west of the Tukwila International Boulevard Station, a hotel's swimming pool, and four single-family homes near S. 192nd Street and 28th Avenue S. Traffic noise impacts would occur at two single-family residences near the S. 200th Station and park-and-ride without noise walls constructed as mitigation. No noise or vibration impacts would be anticipated under Airport Link or for the original project, after mitigation.

Ecosystems

Wetland, wildlife, and vegetation impacts would be low for both the Airport Link and the original project. Airport Link and the original project route would impact 0.60 acre of urban songbird habitat for the S. 200th Station.

Water Resources

Airport Link would create slightly higher levels of new impervious surface area, including pollutant-generating surfaces, north of the airport. The increase in pollutant-generating surfaces is higher than for the original project because of the roadway realignments that are now required. However, the net increase is low, and the same stormwater management and treatment measures will be applied to minimize effects. South of the Airport/SeaTac Station, Airport Link would create the same amount of impervious surface as the original project. Overall, impacts to water resources under Airport Link would be low and remain similar to the original project.

Geology and Soils

Airport Link and the original project have little or no potential for landslide or soil erosion hazards. No impacts to geology and soils are expected.

Hazardous Materials

The documented and potential releases for Airport Link and the original project are similar. Each identified 25 sites of highest concern.

Electromagnetic Fields

As with the original project, no electromagnetic field impacts for Airport Link would be expected.

Public Services

Overall, impacts to fire and emergency medical services, law enforcement, school bus service, and solid waste disposal and collection resulting from Airport Link would be low and substantially the same as identified for the original project.

Utilities

Impacts from Airport Link would be similar to the impacts resulting from the original project. Airport Link may require greater coordination and design considerations to accommodate utilities than the original project because of the realignment of the northbound North Airport Expressway at S. 170th Street and the concentration utilities in the vicinity of the Airport/SeaTac Station. With these measures, impacts to utilities and their users can be minimized.

Historic and Archaeological Resources

Neither the Airport Link alternative nor the original project would adversely affect historic resources. There is a low probability of encountering archaeological resources during construction. The airport area has very low probability due to previous fill and grading, there is a low probability of encountering resources south of the airport. Airport Link will follow the procedures identified in the Central Link Light Rail Project Programmatic Agreement, which includes preparation of an Archaeological Resources Treatment and Monitoring Plan to address any unknown resources encountered.

Parklands

No parklands would be impacted by Airport Link or the original project.

S.4 BENEFITS AND DISADVANTAGES OF DELAYING PROJECT IMPLEMENTATION

The benefits of delaying implementation would be short-term savings in construction and operating costs and delays in increasing environmental impacts such as business or residential displacements. Without Airport Link, airport patrons could still be served by the shuttle from the interim terminus at Tukwila International Boulevard Station, although travel time would be slower with the shuttle. There are a number of disadvantages in delaying project implementation, including higher costs for the construction materials, labor, and right of way over time. Disadvantages also include uncertainty of other parties, including the Port of Seattle and other property owners, for access and changes to the area as a result of other projects.

S.5 ISSUES TO BE RESOLVED

Sound Transit has committed funding to extend light rail to the Airport/SeaTac Station. Funding and timing for construction to S. 200th Station has not yet been determined.

For purposes of SEPA, Sound Transit concludes, based on the analyses summarized in this Addendum, that the proposed project changes and refinements do not substantially change the analysis of significant impacts and alternatives in the existing environmental documents.

1. Purpose and Background

This Environmental Assessment (EA) provides updated information on the environmental effects of light rail from the Tukwila International Boulevard Station in Tukwila, Washington to Seattle-Tacoma International Airport, SeaTac City Center, and to S. 200th Street in SeaTac. Light rail construction has already started on the Initial Segment of the Central Link light rail project from downtown Seattle to the Tukwila International Boulevard Station in Tukwila. Airport Link would modify the route in SeaTac for the Central Link light rail project, previously selected by the Sound Transit Board in November 1999.

Sound Transit and the Federal Transit Administration (FTA) originally prepared the Central Link Final Environmental Impact Statement (EIS) after determining that the development and operation of light rail had the potential for significant environmental impacts. The adverse effects occurring as a result of Central Link alternatives, including for light rail in SeaTac, were previously disclosed in the 1999 Central Link Final EIS. This Airport Link EA provides updated environmental information and assesses changes in environmental effects that could occur with currently proposed project revisions.

This EA is being prepared in compliance with the requirements of the National Environmental Policy Act (NEPA) and also serves as a State Environmental Policy Act (SEPA) Addendum. The FTA is the lead agency under NEPA for the EA. Federal regulations (23 CFR 771) provide for environmental assessments or reevaluations when an action does not clearly involve significant environmental effects not previously disclosed in an EIS.

Sound Transit is the nominal SEPA lead agency for this project. The Port of Seattle (Port) is a co-lead agency under SEPA, as the Port will be constructing portions of the related roadway modifications for the light rail segment in the airport vicinity and is the lead agency for SEPA actions on Port property.

1.1 BACKGROUND

The Sound Transit Board selected the alignment, station locations, and the maintenance base to be built for the Central Link project (original project) on November 18, 1999, in Resolution No. R99-34. This included the route to SeaTac and S. 200th Street. The board action was supported by the 1999 Central Link Final EIS, issued November 1999. On November 29, 2001, the Sound Transit Board passed resolution R2001-16 selecting the Initial Segment as the first portion of the project for construction. The Initial Segment EA, February 2002, analyzed the changes in environmental impacts from those covered by the 1999 Central Link Final EIS. The Initial Segment includes the Tukwila Freeway Route, an alternative route through the city of Tukwila, which was separately evaluated in the Tukwila Freeway Route Supplemental EIS, November 2001. The Initial Segment is a subpart of the original project analyzed in the 1999 Central Link Final EIS, as modified by the inclusion of the Tukwila Freeway Route.

The FTA issued an amended record of decision on May 8, 2002 for the Initial Segment. The 14-mile Initial Segment begins near Convention Place in downtown Seattle with Westlake Station as the interim northern passenger terminus and extends to the Tukwila International Boulevard Station at S. 154th Street as the southern interim terminus, just northeast of SeaTac's city boundary. Construction on the Initial Segment began in January 2004 and is scheduled to begin operation in 2009. Other portions of the system required more time to study complex design issues, including the segments from Tukwila to the airport and from downtown Seattle to the University District and Northgate.

Due to these project changes, as well as changes to the Port's development plans for Sea-Tac Airport, Sound Transit has developed a modified light rail project route and station locations in the SeaTac segment. Sound Transit has been coordinating closely with the Port of Seattle and City of SeaTac to integrate a revised design for Airport Link that supports City land use and Sea-Tac Airport operations.

The Sound Transit Board and Port of Seattle have identified a plan for a light rail station adjacent to the main airport terminal and parking garage that would be integrated with the Port's facilities. The Port of Seattle is currently conducting a Master Plan Update, which will allow future development of additional gates north of the existing terminal but will rely on the existing central terminal for access to those gates. Airport Link is being located and designed to accommodate the Port's ongoing development actions.

Airport Link would complete the connection from the Initial Segment's interim terminus at Tukwila International Boulevard Station to Sea-Tac Airport and ultimately to S. 200th Street. Construction of Airport Link, at least to the Airport/SeaTac Station, is planned to begin in 2006 with operations beginning as early as 2009. No timetable has been set to complete the segment from the Airport/SeaTac Station to S. 200th Street. As the lead NEPA lead agency, FTA has directed preparation of this EA to address the project changes since the publication of the 1999 Central Link Final EIS, Tukwila Final Supplemental EIS, and Initial Segment EA. Changes within the Airport Link segment and resulting impacts are documented in this EA. The FTA will use this EA to make an environmental determination for the project changes. As the co-lead SEPA agencies, Sound Transit and the Port of Seattle will also use this document as a SEPA Addendum and for consideration, along with other documents, in decisions regarding Airport Link. The Federal Aviation Administration (FAA) will also use this document and others to support its decisions regarding potential revisions to the Airport Layout Plan and other actions under its jurisdiction.

1.2 PURPOSE AND NEED

The Purpose and Need for the Central Link light rail project was described in the 1999 Central Link Final EIS, the Tukwila Final Supplemental EIS, and the Initial Segment EA. The purpose of the Central Link project is to construct and operate an electric light rail system connecting the region's major activity centers. Airport Link would connect light rail directly to the Sea-Tac Airport, SeaTac City Center, and ultimately would extend south to a station and park-and-ride at S. 200th Street.

As in the original project, implementing the light rail element of *Sound Move* would expand transit capacity within the region's most dense and congested corridor, provide a practical alternative to travel on increasingly congested roadways, support comprehensive land use and transportation planning, provide environmental benefits, and improve mobility for travel-disadvantaged residents in the corridor. The light rail line is envisioned as the first phase of a long-range regional transit system with future phases extending to the north, east, and south.

The goals, objectives, and measures supporting the Central Link light rail project's purpose and need are listed in Section 1.3.3 of the 1999 Central Link Final EIS and continue to apply to the decisions being made regarding Airport Link. The project's goals and objectives address mobility, environmental quality, financial feasibility, and community support factors. Airport Link was identified by Sound Transit because of its ability to meet the project's goals and objectives. The ability for Airport Link to meet regional transportation and land use goals by supporting the Port of Seattle's goals to develop the airport to meet the future aviation needs of the region and to provide alternative travel means for airport passengers and workers were particularly important considerations.

1.3 COMMENTING ON THE EA

Comments on this EA can be made during the 30-day comment period either in writing by sending a letter to Lauren Swift or orally at the public hearing. The comment period starts on May 26, 2005, and ends on June 27, 2005. Comments in writing should include your name and return address. Please direct written comments to:

Lauren Swift

Central Link, Airport Link EA
Sound Transit, Union Station
401 S. Jackson Street
Seattle, WA 98104
Email: AirportLinkenvironmental@soundtransit.org

1.4 DOCUMENT AVAILABILITY

Copies of the document are available at the Sound Transit main office at Union Station and at area libraries and community centers (see Distribution List in Appendix B). The document is also available on the Internet at www.soundtransit.org.

1.5 PUBLIC HEARING

A public hearing will be held:

Thursday, June 15, 2005, 6:00 to 8:00 PM

SeaTac City Hall, Council Chamber
4800 S. 188th Street
SeaTac, Washington 98188

1.6 CONTACTS

If you have questions regarding the EA, please contact one of the following:

1.6.1 Sound Transit – Proponent**Leonard McGhee**

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Lauren Swift

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(206) 398-5445

1.6.2 Port of Seattle – Proponent**David McCraney**

Port of Seattle
PO Box 1209
Seattle, WA 98111
(206) 728-3193

1.6.3 Federal Transit Administration – NEPA Lead Agency**John Witmer**

Federal Transit Administration
915 Second Avenue, Suite 3142
Seattle, WA 98174-1002
(206) 220-7954

1.7 RELATED ENVIRONMENTAL DOCUMENTS

Regional Transit System Plan EIS. March 1993.

PSRC Final Supplemental EIS on the VISION 2020 Update and Metropolitan Transportation Plan EIS. March 1995.

Central Link Light Rail Transit Project Final EIS. Sound Transit. November 18, 1999.

Tukwila Freeway Route Final Supplemental EIS. Sound Transit. November 16, 2001.

Tukwila Addendum to the Tukwila Freeway Route Final Supplemental EIS. Sound Transit. August 2004.

Initial Segment SEPA Addendum. Sound Transit. October 30, 2001.

Initial Segment Environmental Assessment. Sound Transit. March 2002.

Amended Record of Decision for the Initial Segment of the Central Link Light Rail Transit Project. May 8, 2002.

Final EIS for the Proposed Master Plan Update Development Actions at Seattle-Tacoma International Airport. Federal Aviation Administration and the Port of Seattle. February 1996.

Final Supplemental EIS for the Proposed Master Plan Update Development Actions at Seattle-Tacoma International Airport. Federal Aviation Administration and the Port of Seattle. May 1997.

Destination 2030: Metropolitan Transportation Plan for the Central Puget Sound Region. Puget Sound Regional Council. May 24, 2001

2. Description of Airport Link

Airport Link is the combined light rail and related airport internal circulation modifications for Sound Transit's proposed southern extension of light rail from Tukwila, Washington to Sea-Tac Airport and the city of SeaTac. The Airport Link extension would start at the Tukwila International Boulevard Station (previously called the S. 154th Station) in Tukwila, which is being developed as part of the Initial Segment. The Initial Segment is the 14-mile light rail line currently under construction between downtown Seattle and the Tukwila International Boulevard Station. The Airport Link would extend from Tukwila International Boulevard Station south to the Airport/SeaTac Station and then to a terminus at the S. 200th Station and park-and-ride. Figure 2-1 shows Airport Link as part of the Central Link light rail system, and Figure 2-2 shows Airport Link's route and station with more detail in the airport area, including the roadway modifications required to accommodate light rail. In the 1999 Central Link Final EIS, the area where Airport Link is located was labeled Segment F.

Together with the Port of Seattle, Sound Transit has developed the modified route to the airport to accommodate airport needs and support the SeaTac urban center. Construction of Airport Link to the Airport/SeaTac Station is planned to start in 2006, with operations beginning as early as December 2009. A timetable for the additional plan to extend the line from the airport to S. 200th Street has not been determined. The Initial Segment anticipates service beginning in 2009, approximately six months prior to Airport Link. Appendix C contains conceptual design plans for Airport Link.

2.1 AIRPORT LINK

2.1.1 Light Rail from Tukwila International Boulevard Station to Airport/SeaTac Station

The proposed Airport Link extension would begin from the elevated Tukwila International Boulevard Station at S. 154th Street in Tukwila, crossing over State Route (SR) 99/International Boulevard and SR 518, to an alignment between the northbound and southbound North Airport Expressway. Light rail would be at-grade here before transitioning to a retained fill structure approaching and crossing over S. 170th Street. Then the elevated light rail would curve toward International Boulevard to reach an elevated Airport/SeaTac Station near the intersection with S. 176th Street. Several buildings currently along the proposed alignment would be demolished. Cross-over tracks and a traction power substation would be to the north of the station. The light rail alignment length between Tukwila International Boulevard Station and the Airport/SeaTac Station is approximately 1.7 miles.

By comparison, the original project (see Figure 2-2) included a similar route from the Tukwila International Boulevard Station, but had an alignment further to the east of the existing airport expressways, more elevated sections, and two different station locations for serving the airport. One station would have been located north of S. 170th Street and the other at S. 184th Street. From the section of S. 172nd Street to S. 200th Street, the original project and Airport Link are the same and reflect the results of additional design undertaken to date.

Airport Link would be served by the Central Link maintenance facility, currently under construction at S. Lander Street in Seattle. With the light rail fleet required for the Central Link system, including Airport Link, one additional storage track would be added to the facility; construction of this track was deferred in the Initial Segment, but was part of the maintenance base previously evaluated in the 1999 Central Link Final EIS. Sound Transit would also acquire four additional light rail vehicles to the fleet already planned for the Initial Segment operations. In 2015, trains will operate every 6 minutes during peak weekday travel periods, and from 7.5 to 15-minute intervals at other times. In 2030, frequencies will increase to 5 minutes in



SOUNDTRANSIT

**Figure 2-1
Central Link Light Rail Project
with Airport Link, Initial
Segment, and North Link**

Initial Segment Stations

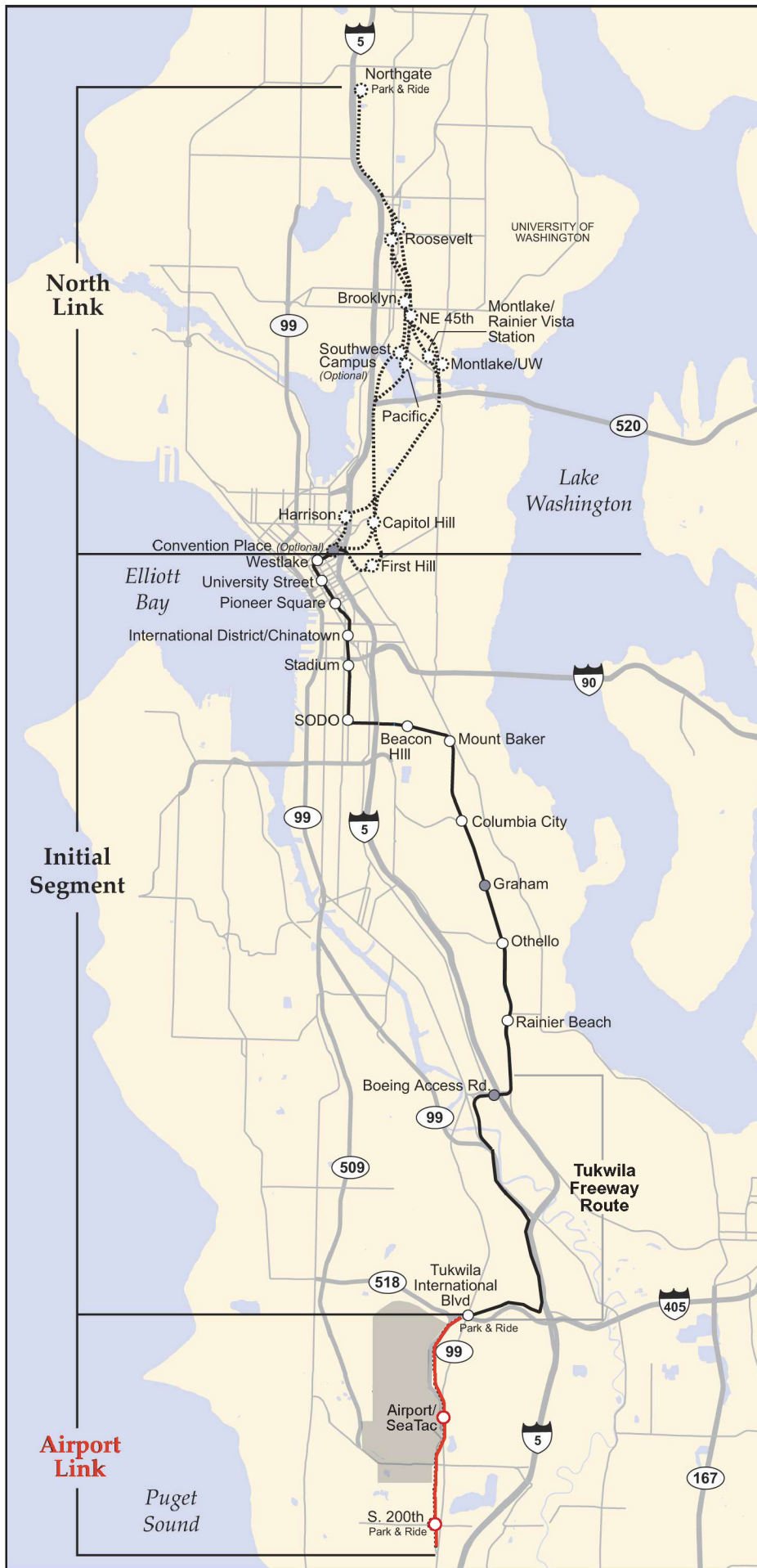
Westlake
University Street
Pioneer Square
International District³
Royal Brougham⁴
Lander
Beacon Hill

McClellan
Edmunds
Graham⁴
Othello
Henderson

Boeing Access Road^{1,3,4}
Tukwila International Blvd.¹

Airport Link Stations

Airport/SeaTac
S. 200th¹







¹ Includes Park-and-Ride

² Optional station

³ Light Rail/Commuter rail transfer

⁴ Deferred station

-  Airport Link
-  Initial Link light rail route and stations
-  Deferred or optional stations
-  Future Phase 1 route and station options



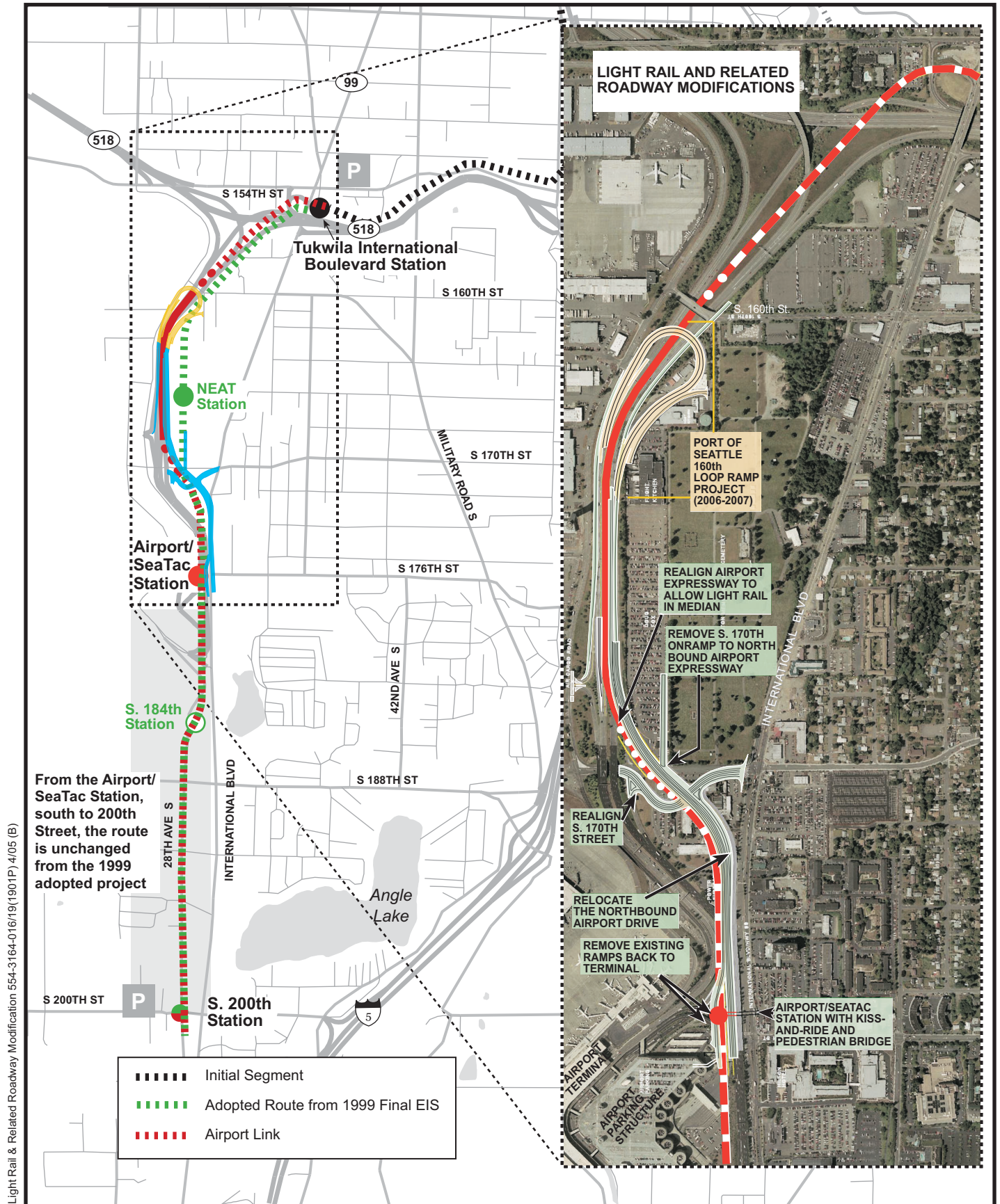


Figure 2-2
Airport Link

weekday peak periods and from 7.5 to 15 minute intervals at other times. Service hours would be from 5:00 AM to 1:00 AM weekdays and Saturdays, and 6:00 AM to 1:00 AM Sundays. More details on fleet operations are provided in Appendix H.

2.1.2 Airport/SeaTac Station

The Airport/SeaTac Station would be located adjacent to the northeast end of the existing main terminal parking structure, with the station mezzanine at the same elevation as the fourth level of the main terminal parking structure (see Appendix C, Figure SE2-AM01). A dedicated pedestrian passageway at the mezzanine level of the station would connect the elevated Airport/SeaTac Station through the parking garage to the main terminal. This passageway could be redeveloped if future airport plans change the garage layout. The Airport/SeaTac Station would also have an elevated pedestrian bridge at the mezzanine level of the station crossing to the east side of International Boulevard, where an entrance building would include stairs and elevators. Stairs and escalators would also link the mezzanine level to the center platform, which would be 400 feet long, with tracks on either side. The station also has a kiss-and-ride drop-off area for patrons on the east side of International Boulevard. A kiss-and-ride drop-off area is essentially a driveway where cars can pull over and stop temporarily to allow patrons to exit the vehicle; no parking is planned. Sound Transit, the City of SeaTac, and others (such as King County Metro) are also coordinating station area planning and related developments and improvements. The station plan assumes a minor relocation of the existing bus zones on International Boulevard, but otherwise, bus facilities are assumed to be similar to existing conditions. Other related improvements include potential sidewalk and landscaping treatments in the station area.

To make room for construction of the light rail station, the existing north airport parking garage entrance and exit must be relocated. The station area would also be located in the area currently occupied by three return-to-terminal ramps, which would also be closed and demolished. Circulation would be maintained by the S. 160th Street Loop Ramp project, a separate Port of Seattle effort, as described in the No-Build alternative. If the Port of Seattle elects not to undertake the S. 160th Street Loop Ramp project, Sound Transit would work with the Port to devise an alternate means of constructing the Airport/SeaTac Station or replacing the function of the existing return-to-terminal ramps and conduct any required environmental review pursuant to NEPA and SEPA as appropriate. Construction of Airport Link would not occur until appropriate environmental review and approvals of the mitigation are conducted, including approvals from the FAA. However, in either case, the relocated northbound expressway will include construction of a five-lane section to maintain effective access to the S. 160th Street loop ramp, and to avoid traffic queues extending onto the northbound expressway from eastbound SR 518. This would be needed if WSDOT does not improve conditions on SR 518 prior to the development of Airport Link and the S. 160th Street Loop Ramp project. Additional discussion is provided in Section 2.1.5, and related operational conditions are discussed in Section 3.1.

2.1.3 Airport/SeaTac Station to S. 200th Station

Between the Airport/SeaTac Station and S. 200th Street, the 2.0 mile section of the Airport Link route is similar to the original project route selected by Sound Transit in 1999, although some minor design revisions have occurred, and area roadways have been improved since 1999, including the completion of 26th/28th Avenues S. From the Airport/SeaTac Station, the route would continue elevated along the west side of International Boulevard, turn southwest to cross S. 188th Street, and continue elevated along the east side of 28th Avenue S. to S. 200th Street.

2.1.4 S. 200th Station

The southern terminus of Airport Link and the Central Link light rail project would be a station at S. 200th Street in south SeaTac (see Appendix C). The station would straddle S. 200th Street and include provisions for leasing or providing 630 park-and-ride spaces on the adjacent property involving a two to four

story structure, consistent with the City's parking requirements for high-capacity transit facilities. Bus transfer areas are to be located to the north of S. 200th Street, with entrance driveways accessible from International Boulevard and S. 200th Street. A signalized driveway intersection at 27th Avenue S. would provide the primary access to the S. 200th Park-and-Ride. Pedestrian and bicycle improvements may also occur in the station area. A traction power substation would be sited near the station. Pedestrians would also be able to cross at-grade or via the elevated platform, which provides a pedestrian overpass over S. 200th Street. Other crosswalks are provided at the future 27th Avenue S. intersection with S. 200th Street.

The Airport Link station plan is similar to options considered for the original project, but the layout of the station and its circulation plan has been refined through additional design. Both surface and structured parking alternatives were previously considered for the station's park-and-ride.

2.1.5 Terminal Roadway System Modifications Required for Airport Link

To provide the space needed for light rail guideways and the station, the project would need to revise portions of the terminal roadway system. The existing northbound North Airport Expressway would be realigned to the east (see Figure 2-2). In addition, a short segment of the southbound North Airport Expressway north of S. 170th Street would be realigned. This realignment would provide space needed to construct the light rail alignment while also conserving areas that could support future development of the airport. The relocation of the North Airport Expressway includes two bridges, embankment, retaining walls, new and relocated utilities, relocation of S. 170th Street, and construction of an airfield access tunnel.

The northern parking garage entrance and exit must be relocated. Relocation of these access roads would be staged to maintain active traffic throughout construction.

S. 170th Street would also be realigned to accommodate light rail and the revised northbound North Airport Expressway. Realigning S. 170th Street would require a new off-ramp from the northbound expressway onto S. 170th Street, replacing the existing off-ramp. The existing on-ramp from S. 170th Street to the northbound expressway would be removed. The S. 170th Street driveways to Washington Memorial Park Cemetery and an airport parking facility would be relocated. Several buildings would be demolished to accommodate these roadway modifications.

The Sound Transit project includes the demolition of three return-to-terminal ramp bridges on airport property to provide room for the Airport/SeaTac Station. These include Bridge 5 (ramp from garage parking to the lower drive), Bridge 6 (return-to-terminal ramp to the upper drive), and Bridge 7 (return-to-terminal ramp to the lower drive) and any associated auxiliary structures required. The demolition of the bridges would not allow the Port to use these ramps to manage heavy traffic flows within the airport. During peak traffic periods, management efforts may be needed to prevent conflicts that could occur between recirculating airport traffic and vehicle queues extending onto the northbound expressway from eastbound SR 518. SR 518 may not be improved before Airport Link and the S. 160th Street Loop Ramp project are built. To address these conditions, Airport Link includes a fifth lane on the northbound North Airport Expressway to provide access to the airport terminal without conflicts from queued vehicles from SR 518. The fifth lane would begin at the exit ramp from the airport parking garage. Two of the lanes will be drop-lanes for the exit to the S. 160th Street loop ramp. The other three lanes will continue north to SR 518.

2.1.6 Terminus Options

Sound Transit plans to build Airport Link in segments. The Airport/SeaTac Station is being designed to operate as an interim southern terminus until construction of the line continues to S. 200th Street, which is anticipated when funding becomes available. The complete Central Link light rail project continues to assume a southern terminus at the S. 200th Station. Therefore, the Airport/SeaTac Station and the S. 200th Station are both being analyzed as terminus options in this EA. However, the Airport/SeaTac Station involves the same footprint, facilities, and operational features whether it is a terminus or a line station.

2.1.7 Construction

Sound Transit plans to begin construction of Airport Link from Tukwila International Boulevard Station to the Airport/SeaTac Station in 2006 with operations starting as early as 2009. Construction from the Airport/SeaTac Station to the S. 200th Station is dependent on funding availability, and a schedule to complete this segment has not been determined. The duration of construction for Airport Link would be approximately 3 years, although construction at individual sites would range from a few months to 3 years.

Typical construction for surface and elevated guideways and stations, as well as for the roadway elements, would likely occur on a 6-days-per-week work schedule. In some locations (such as where substantial detours or lane closures are involved, or where construction periods need to be abbreviated to reduce other impacts), Sound Transit and the Port could use all-week or 24-hour construction. In addition, alternate shifts may be required for work within the airport to accommodate higher traffic volumes related to peak airline operations.

The overall construction duration includes a period of civil construction during which site preparation, primary construction, and finish construction take place. For the light rail elements, civil construction is followed by a typically shorter period of systems installation, integration, and testing of the light rail line. The roadway elements of the project would be staged to complete the work in segments to allow traffic to be maintained.

The civil construction work would normally begin with site preparation, including property acquisition, demolition and clearing, and utilities rerouting. Demolition involves implementing stormwater and erosion control measures, tearing down buildings and structures, relocating utilities, removing debris, and containing and disposing of hazardous materials. Construction and demolition work creates noise and dust, and there would be truck traffic for debris removal. Staging areas are also needed before, during, and for a short time after construction work occurs. A more detailed discussion of construction activities is provided in Section 3.18.

2.2 NO-BUILD ALTERNATIVE

The No-Build alternative provides a baseline condition for comparing the impacts of Airport Link. The No-Build alternative establishes transportation conditions in two future forecast years, 2015 and 2030. The 2015 No-Build alternative refers to the existing transportation system, plus funded projects in the Puget Sound Regional Council's (PSRC) adopted Transportation Improvement Program. By the 2030 horizon year, the No-Build alternative is assumed to include all the transportation projects and programs included in PSRC's adopted Metropolitan Transportation Plan, Destination 2030. The Metropolitan Transportation Plan includes extensive transportation network improvements such as completing an interconnected system of freeway and arterial high-occupancy vehicle (HOV) lanes, constructing missing links for network continuity, expanding transportation capacity to and between activity centers, widening some major roadways, upgrading highway safety and efficiency, providing better arterial access control, and increasing auto ferry capacity across Puget Sound (PSRC 1999).

The No-Build alternative also incorporates planned changes in existing land use and related increases in population and employment consistent with PSRC forecasts and local adopted plans.

The No-Build alternative assumes operation of the Initial Segment for the Central Link light rail, with the North Link extension to Northgate. From the southern terminus of the Initial Segment at Tukwila International Boulevard Station, a shuttle bus would operate between the station and the airport. This provides full build-out conditions for evaluating ridership and operational impacts of Airport Link.

Two Port of Seattle projects in the vicinity are also included in the No-Build alternative definition: the Port of Seattle S. 160th Street Loop Ramp project, and the Remote Consolidated Rental Car Facility. These projects are independent of Airport Link and would be implemented with or without Airport Link.

Port of Seattle's S. 160th Street Loop Ramp Project

The S. 160th Street Loop Ramp project would develop a multi-lane return-to-terminal ramp on the North Airport Expressway, in the vicinity of the S. 160th Street overcrossing. The purpose of the S. 160th Street Loop Ramp project is to reduce traffic congestion throughout the terminal roadway system during both normal operations and higher security levels, reduce the number of vehicles recirculating through the terminal roadway system and curbside, and provide signage to support customer way-finding needs.

The construction of the S. 160th loop ramp would include retaining wall structures, utility relocations, roadway signage modifications, roadway lighting modifications, storm drainage modifications, landscaping, and possible art components. The project would also widen the entrance ramp to the lower drive from one to two lanes.

The Port has conducted SEPA analysis on this project and has been coordinating with the FAA for NEPA compliance.

In the event that the Port of Seattle elects not to undertake this project, Sound Transit would work with the Port to devise an alternative means of constructing the Airport/SeaTac Station or replacing the function of the return-to-terminal ramps that would be displaced by the station, and conduct any required environmental review pursuant to NEPA and SEPA as appropriate. Construction of Airport Link would not occur until appropriate environmental review of the mitigation was conducted, including an affirmative finding by FAA on changes to the Airport Layout Plan.

Remote Consolidated Rental Car Facility

The Port of Seattle is currently evaluating the construction of a new remote consolidated rental car facility (RCF) for Sea-Tac Airport on a 21-acre parcel of land near S. 160th Street and International Boulevard. The project would provide a single location for delivery of rental cars at the airport and a common facility that would be used by all rental car companies. Consolidation of rental car activities at the RCF would relocate the five companies currently operating in the Main Garage, as well as provide relocation opportunities for the off-site rental car companies currently serving the airport. When complete, the facility could house between 10 and 12 rental car companies with associated office and support facilities. This would allow for additional public parking space in the Main Garage and would eliminate rental car trips on the airport roadway system. A consolidated busing operation will be required to move rental car customers between the RCF and the main terminal. A fleet of approximately thirty-five 40-foot-long, low-floor configuration buses, including seven spare buses, would move rental car customers between the proposed RCF and the passenger terminal. The project also includes a ramp from S. 160th Street to the northbound North Airport Expressway, a new southbound lane on SR 99, and access improvements to SR 518, including a new ramp from S. 160th Street to eastbound SR 518.

The Port has completed SEPA analysis on this project and is working with the FAA to identify any required NEPA analysis.

2.3 COMPARISON OF AIRPORT LINK TO THE ORIGINAL PROJECT

Light rail service to the airport and south was previously examined in the 1999 Central Link Final EIS, which evaluated alternatives for the 24-mile light rail project connecting Northgate, the University District, First Hill, downtown Seattle, south central Seattle and the Rainier Valley, and on to Tukwila and SeaTac to S. 200th Street.

The original project was based on the preferred alternative identified in the 1999 Central Link Final EIS (Alternative F2.3 – Washington Memorial Park, Elevated East of 28th). The original project and Airport Link alignments differ slightly between S. 154th Street and the Airport/SeaTac Station, but are the same south of the Airport/SeaTac Station to S. 200th Street except that the original project also included a potential station at S. 184th Street. The original project in this area included the Tukwila International Boulevard Station, which was selected as part of the Initial Segment. The original project was entirely

elevated. The original light rail alignment briefly followed the east side of the North Airport Expressway south of S. 154th Street before traveling along the west side of Washington Memorial Park Cemetery and reaching the 1997 Master Plan Update's North End Airport Terminal (NEAT) Station, an airport facility expansion that would have involved revised roadways and access. Since selection of the original project by Sound Transit, the Port began reevaluating the long-term terminal development options for the airport. The Port is currently evaluating a new comprehensive development strategy for accommodating projected growth up to 45 million passengers by the year 2021. As part of this evaluation, the Port identified the Link light rail alignment and station location that will connect to the main terminal at Sea-Tac Airport.

After leaving the NEAT Station, the original project then continued along the west side of Washington Memorial Park Cemetery until just south of S. 170th Street, where the alignment curved to follow the west side of International Boulevard past the airport. At S. 184th Street and International Boulevard, the original project included a potential station. This station is not proposed as part of Airport Link. From this point, the original project alignment and Airport Link as evaluated in this EA are the same. This EA incorporates the results of additional engineering and design work performed following the publication of the 1999 Central Link Final EIS, for the section of the original project from the Sea-Tac Airport to S. 200th Street.

In addition to the original project (preferred alternative F2.3), the 1999 Central Link Final EIS evaluated seven build alternatives in Segment F that are no longer being considered. Chapter 2 of the Central Link Final EIS provides a detailed description and map of all the previous Segment F alternatives. One alternative (F1) was entirely at-grade, while the rest of the alternative profiles were a combination of at-grade and elevated. Two of the previous alternatives, in addition to the original preferred alternative F2.3, followed the west side of Washington Memorial Park Cemetery to the airport. Five of the previously evaluated alternatives followed International Boulevard to the airport. One alternative (F3.2) veered west and one alternative (F2.2) veered east of International Boulevard for a short distance near the airport's Main Terminal before curving back towards International Boulevard. From the airport, one alternative (F1) then continued down International Boulevard to S. 200th Street. All of the other Segment F alternatives followed 28th Avenue S. to S. 200th Street.

2.4 ENVIRONMENTAL PROCESS

FTA, the Port of Seattle, and Sound Transit are developing this environmental document for the Airport Link project. This is a NEPA EA that also serves as a SEPA Addendum to the Central Link Final EIS (1999) and the Tukwila Freeway Route Final Supplemental EIS (2001). This Airport Link EA also references information contained in Sound Transit's Initial Segment EA (2002), which included updated environmental information for the Tukwila International Boulevard Station and the light rail project sections adjacent to the start of the proposed Airport Link extension. As a SEPA Addendum, this document provides updated environmental information to address changes in the project occurring since the previous SEPA documents.

Following the release of the Airport Link EA, the FTA and Sound Transit will accept public comments for 30 days (May 26, 2005 to June 27, 2005) and a public hearing will be held on June 15, 2005 (see Section 1.5). The Sound Transit Board is then expected to adopt the Airport Link project following the close of the public comment period, which is a key step to allow final design efforts to begin. Sound Transit will develop responses to public comments on the Airport Link EA in coordination with Port of Seattle and FTA. FTA anticipates issuing a Record of Decision in Summer 2005. Other agencies may also rely on the documentation in the EA and Addendum to support their decisions or actions related to the Airport Link project.

For purposes of SEPA, Sound Transit concludes, based on the analyses summarized in this Addendum, that the proposed project changes and refinements do not substantially change the analysis of significant impacts and alternatives in the existing environmental documents.

2.5 AIRPORT LINK PROJECT SCHEDULE

The overall schedule for the development of Airport Link is as follows:

Publish EA	May 2005
EA comment period	May–June 2005
Sound Transit Board selects project	July/August 2005
Port of Seattle Commission approvals	Summer 2005
Federal Record of Decision by FTA	September 2005
Final design	2005–2006
Start construction	2006
Start service operation	2009

2.6 FINANCIAL ANALYSIS

Preliminary capital cost estimates for construction of Airport Link from the Tukwila International Boulevard Station to the Airport/SeaTac Station are between \$305 million to \$325 million in year of expenditure (YOE) dollars for both the associated roadway work and the light rail guideway and station. The light rail portion is estimated to cost approximately \$245 million (YOE), and the road projects are estimated to cost \$60 million to \$80 million (YOE). Cost estimates are based on preliminary engineering. Cost estimates for the segment from the Airport/SeaTac Station to the S. 200th Station have not been developed, as there is no timetable to complete that portion of the alignment.

Sound Transit and the Port of Seattle would jointly fund and construct the project. The Port of Seattle would issue revenue bonds for its share of project costs associated with the roadway projects. Sound Transit has developed a proposed finance plan for construction of Airport Link from S. 154th Street to the Airport/SeaTac Station. This finance plan would fund construction and initiate revenue service by January 1, 2010. The primary sources of funds under this plan are Sound Transit's resources within the South King County subarea at existing voter-approved tax levels. The proposed Airport Link finance plan includes a change in the agency's financial policies to lower its net debt service coverage levels from 1.3 times current levels to 1.15 times. This change has not yet been approved by the Sound Transit Board. In addition, the plan calls for receipt of approximately \$40 million in competitive (non-New Starts) federal grants and other adjustments to the current South King County subarea budget. As part of this plan, in 2004 Airport Link received \$14.25 million in FTA competitive 5307 formula funds for Airport Link.

Annual operating and maintenance costs for Central Link from Northgate to the Tukwila International Boulevard Station are estimated to be \$55 million and \$63 million for 2015 and 2030, respectively (2004 dollars). The extension of light rail to Airport/SeaTac Station would increase operating costs by \$3 million and \$3.5 million in 2015 and 2030, respectively. Extension to the S. 200th Station would increase operating and maintenance costs by an additional \$3 million and \$1.8 million, respectively.

3. Changes in Environmental Effects and Mitigation

3.1 TRANSPORTATION

This section presents the transportation impacts from the Airport Link light rail project. The specific elements of the transportation system are transit, traffic operations, parking, access and circulation, and freight movement. Transit system impacts are defined by transit service coverage, service levels, travel time, transfers, reliability, and passenger comfort. Traffic and parking impacts are defined by various measures, such as intersection operations, access and circulation, traffic safety, non-motorized facility impacts, and parking loss and changes in parking demand.

3.1.1 Affected Environment

3.1.1.1 Travel Patterns

Since 1980, the Central Puget Sound region's travel demand has increased substantially, and travel patterns have become more dispersed and complex. Destination 2030: Metropolitan Transportation Plan for the Central Puget Sound Region (King, Pierce, Snohomish, and Kitsap Counties) (PSRC May 2001) and the Six-Year Action Strategy (PSRC January 1999) document travel trends in the Puget Sound area. They predict that with no major improvements in regional transportation systems, there would be:

- Increase in PM peak congestion – There would be an increase in the percent of the freeway network that would experience severe congestion (volume/capacity or v/c ratio greater than 1.0, which is the point where traffic volumes begin to exceed the capacity of the freeway system and severe congestion occurs) from 34 percent in 2000 to 57 percent in 2030 (for general purpose traffic).
- Increase in delay – The average daily vehicle delay would increase from 152,500 hours of system delay or 7 minutes of delay per household in 2000 to 1,000,000 hours of system delay or 30 minutes of delay per household in 2030.
- Continued reliance on automobile travel – Daily vehicle miles traveled (VMT) would increase from 68,800,000 in 2000 to 98,000,000 in 2030.

3.1.1.2 Regional Highways

Approximately 15,000 miles of roadways serve the Central Puget Sound region. The interstate and state highway system, representing only 7 percent of the road network, accounts for nearly one-half of the region's VMT. Major roadway facilities that serve at least a portion of the Airport Link light rail corridor include I-5, SR 99, I-405, SR 509, and SR 518.

The primary performance measure for critical highway segments is the vehicle volume-to-capacity ratio (v/c), or the ratio of demand flow rate to capacity. The Congestion Management System Baseline System Performance Report (PSRC 1998, 1999) provides v/c data on regional conditions. Currently, capacity deficiencies are identified where a v/c of 0.9 is exceeded. On such facilities, drivers would see unstable traffic flows, limited vehicle maneuverability, and disruptions caused by any traffic stream shifts, such as vehicles entering from ramps or changing lanes.

In the Airport Link vicinity, I-5 is the major north-south freeway and consists primarily of ten (eight general purpose and two HOV) lanes. Average daily traffic volumes range from 129,000 to 252,000 vehicles. Peak hour v/c ratios for critical segments along I-5 may range from 0.66 to 1.05. In the AM and PM peak periods, traffic congestion occurs regularly into downtown Seattle. I-5 is generally congested in the southbound direction during the afternoon peak hour, particularly on the Southcenter Hill and near the I-5/I-405/SR 518 interchange.

I-405 is a north-south freeway supporting traffic on the east side of Lake Washington. It connects to I-5 in Tukwila. Currently, capacity deficiencies occur in many segments of the freeway.

SR 509 is a four-lane north-south freeway from SR 99 to S. 188th Street. This segment of SR 509 currently does not experience v/c ratios above 0.9 on an average weekday.

SR 518 is a four-lane east-west freeway that serves as an extension of I-405, connecting I-5 in Tukwila to Sea-Tac Airport and SR 509 in Burien. SR 518 does not currently experience mainline v/c ratios above 0.9 on an average weekday, although some congestion does occur in the eastbound direction at the interchange with I-5 and I-405 and at the SR 509 interchange due to capacity constraints on the ramps.

SR 99 (also known as International Boulevard within the project area) is a north-south highway that serves as a major arterial south of the West Seattle Bridge and north of the Aurora Bridge. Between the West Seattle Bridge and the Aurora Bridge, SR 99 is a six-lane limited access highway. SR 99 is one of the major freeways connecting to the Sea-Tac Airport. Capacity deficiencies occur in some segments.

3.1.1.3 Freight Movement

Freeways, local roadways, and rail lines throughout the Airport Link light rail project area are vital to the movement of freight and goods between major transportation hubs such as the Port of Seattle and Sea-Tac Airport and numerous business and customer destinations. Freight and goods movement within the project area generally consists of two transportation modes: trucks on roadways, or rail on local mainline and spur tracks. The following sections describe the affected environment for key freight roadways and railroad mainlines and spur tracks.

Key Freight Roadways

In 1990, the Washington State Legislature directed the Legislative Transportation Committee to examine the use of the state highway system for truck freight transportation. The State's Legislative Transportation Committee adopted the Freight and Goods Transportation System (FGTS) that resulted from this legislation. The resulting classifications range from T-1, which includes roadways that carry over 10,000,000 tons per year, to T-5, which includes roadways that carry over 20,000 tons in 60 days (used in agricultural areas). Table 3.1-1 summarizes the classifications and the corresponding tonnage and approximate number of large trucks per day for each.

**Table 3.1-1
Freight and Goods Transportation System Classifications**

FGTS Classification	Annual Gross Tonnage	Approximate Number of Large Trucks per Day
T-1	Over 10,000,000	Over 800
T-2	5,000,000 to 10,000,000	400 to 800
T-3	300,000 to 5,000,000	24-400
T-4	100,000 to 300,000	8 to 24
T-5	Over 20,000 in 60 days	

Source: Washington State Legislative Transportation Committee, Resolution 516, March 16, 1995.

I-5 is the principal freight route (classified as T-1) through the Puget Sound region and is located within the Airport Link project area. Previous studies of truck freight within the city of Seattle and Puget Sound region have demonstrated that most truck activity occurs during daytime hours—9:00 AM to 4:00 PM. Generally, truck volumes decline between the hours of 4:00 PM and 7:00 PM and represent a small fraction of afternoon peak commuter traffic. Existing and anticipated future truck volumes are discussed for key locations in some of the following sections.

Many of the roadways within the Airport Link project area serve truck freight accessing shippers at the airport and manufacturing and warehousing in the Tukwila and Kent valleys. In addition to I-5, numerous roadways within the SeaTac segment are included as part of the FGTS; most are classified as T-3. Those roadways include SR 99, SR 518, Military Road, 42nd Avenue S., S. 156th/154th Street, S. 200th Street, S. 192nd Street, S. 188th Street, S. 176th Street, S. 170th Street, 24th Avenue S., and 34th Avenue S. Table 3.1-2 summarizes the FGTS classifications and limits for each roadway.

**Table 3.1-2
FGTS Roadways in SeaTac**

Route Name	Beginning	Ending	Classification
SR 99	North of S. 220th Street (MP 016.52)	S. 152nd Street (MP 020.60)	T-3
SR 509	I-5 (MP 000.00)	SR 99 (MP 001.75)	T-3
SR 518	SR 509 (MP 000.60)	SR 99 (MP 002.51)	T-3
Military Road	S. 128th Street	SR 99	T-3
Military Road	SeaTac South City Limits	S. 164th Street	T-3
42nd Avenue S.	S. 164th Street	S. 160th Street	T-3
42nd Avenue S.	S. 188th Street	S. 176th Street	T-3
S. 156th/154th Street	Des Moines Memorial Drive	SR 99	T-3
S. 200th Street	Des Moines Memorial Drive	Military Road	T-3
S. 192nd Street	Des Moines Memorial Drive	12th Place S.	T-3
S. 188th Street	I-5	SR 509	T-2
S. 176th Street	SR 99	SeaTac East City Limits	T-3
S. 170th Street	Air Cargo Road	Military Road	T-4
24th Avenue S.	S. 156th Street	S. 128th Street	T-3
34th Avenue S.	S. 176th Street	S. 160th Street	T-3

Source: FGTS for King County – SeaTac, September 9, 1997

Note: MP = Milepost

Railroad Mainlines and Spur Tracks

There are no railroad mainlines or spur tracks within the Airport Link project area.

Navigable Waterways

There are no navigable waterways within the Airport Link project area.

3.1.1.4 Transit Network Service

Ridership

King County Metro Transit and Sound Transit provide public transit in the project area. There are seven routes that serve the Sea-Tac Airport and surrounding project area. During the PM peak hour, these routes make approximately 30 transit vehicle trips through the Airport Link project area. Transit ridership at the Sea-Tac Airport bus bays is a total daily ridership of 3,900 riders on a typical weekday (2,000 boardings/1,900 alightings) and 870 riders during the 3-hour PM peak period (3:15–6:15 PM) with 480 boardings/390 alightings. These ridership numbers include Sound Transit Route 560, which is operated by Metro Transit, but not Sound Transit Route 574, which is operated by Pierce Transit. Pierce Transit reported a total daily ridership of approximately 1,260 riders on a typical weekday in 2004.

Regional Transit Service

Sound Transit currently operates two regional transit routes that serve the greater SeaTac area and the Sea-Tac Airport. These two routes are described in detail below.

- Route 560 serves Bellevue, Renton, Burien, and West Seattle and provides express service Monday through Friday with a 30-minute headway and a 60-minute headway on Saturdays and Sundays. While Route 560 serves the Sea-Tac Airport, it does not travel through any of the Airport Link project area intersections. This route is operated for Sound Transit by King County Metro Transit and operates between 4:30 AM and 12:00 AM on weekdays and from 6:00 AM to 12:00 AM on weekends.
- Route 574 serves Lakewood and Tacoma and provides express service Monday through Friday as well as Saturdays and Sundays with a 30-minute headway during peak times and a 60-minute headway during off-peak times. This route currently has four PM peak hour trip (total for both directions). This route is operated for Sound Transit by Pierce Transit and operates between 3:00 AM and 10:00 PM seven days a week.

In addition, the Central Link light rail Initial Segment currently under construction will provide service between the Tukwila International Boulevard Station in Tukwila and the Westlake Station in downtown Seattle prior to the completion of Airport Link. Central Link light rail will terminate at the Tukwila International Boulevard Station and a shuttle bus will transfer passengers to the Sea-Tac Airport. The shuttle bus will be coordinated with light rail to allow for timed transfers and minimize wait time for passengers. The shuttle bus will drop passengers at the courtesy vehicle drop-off/pick-up area in the Sea-Tac parking garage adjacent to Airport Drive and the main terminal.

International Boulevard (SR 99) has also been identified in King County Metro Transit's Six-Year Plan as a potential bus rapid transit corridor, and the future development of bus rapid transit would enhance transit service reliability.

Local Transit Service

Metro Transit currently operates five transit routes within the Airport Link project area. These five routes are described in detail below.

- Route 140 serves Southcenter, Renton, and Burien and provides service Monday through Friday with 20- to 30-minute headways and 60-minute headways on Saturdays and Sundays. This route currently has nine PM peak hour trips (total for both directions).
- Route 170 serves downtown Seattle and McMicken Heights and provides AM and PM peak period service Monday through Friday with 30-minute headways. This route offers northbound service during the morning hours between 6:00 AM and 8:00 AM and southbound service during the evening hours between 4:00 PM and 6:00 PM. This route currently has one PM peak hour trip (southbound).
- Route 174 serves downtown Seattle and Federal Way and provides service Monday through Friday as well as Saturdays and Sundays with a 30-minute headway. This route currently has eight PM peak hour trips (total for both directions).
- Route 191 serves downtown Seattle and Star Lake and provides AM and PM peak period service Monday through Friday with 30-minute headways. This route offers northbound service during the morning hours between 5:45 AM and 8:45 AM and southbound service during the evening hours between 3:30 PM and 6:30 PM. This route currently has two PM peak hour trip (southbound).
- Route 194 serves downtown Seattle and Federal Way and provides service Monday through Friday with 15- to 30-minute headways as well as 30-minute headways on Saturdays and Sundays. This route currently has six PM peak hour trips (total for both directions).

3.1.1.5 Street Network

Physical Characteristics

Figure 3.1-1 illustrates the major streets and intersections in the Airport Link transportation project area and identifies the signalized intersections and parking inventory areas for this analysis.

Table 3.1-3 summarizes the existing physical characteristics of major roadways in the Airport Link transportation project area. These characteristics include functional classification based on the City of SeaTac Comprehensive Plan, number of lanes, and speed limits of all roadway segments in the project area.

Table 3.1-3
Existing and Proposed Roadway Characteristics in the Airport Link Transportation Project Area

Roadway	Arterial Classification	Number of Lanes	Speed Limit (mph)
International Boulevard	Principal	4 to 6	40
S. 154th Street	Minor	4	35
S. 160th Street	Minor	4	35
S. 170th Street	Proposed Minor	4	35
S. 176th Street	Minor	4	35
S. 188th Street	Principal	4 to 6	35
S. 200th Street	Principal	4 to 6	35 to 40
26th Avenue S.	Principal	2 to 5	25 to 35
28th Avenue S.	Principal	2 to 5	25 to 35
32nd Avenue S.	Minor	2 to 3	25

Source: Parametrix staff field work and the City of SeaTac Comprehensive Plan, Map 3.1 Existing and Proposed Roadway System. November 17, 2004.

Traffic Volumes and Levels of Service

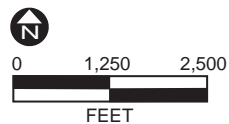
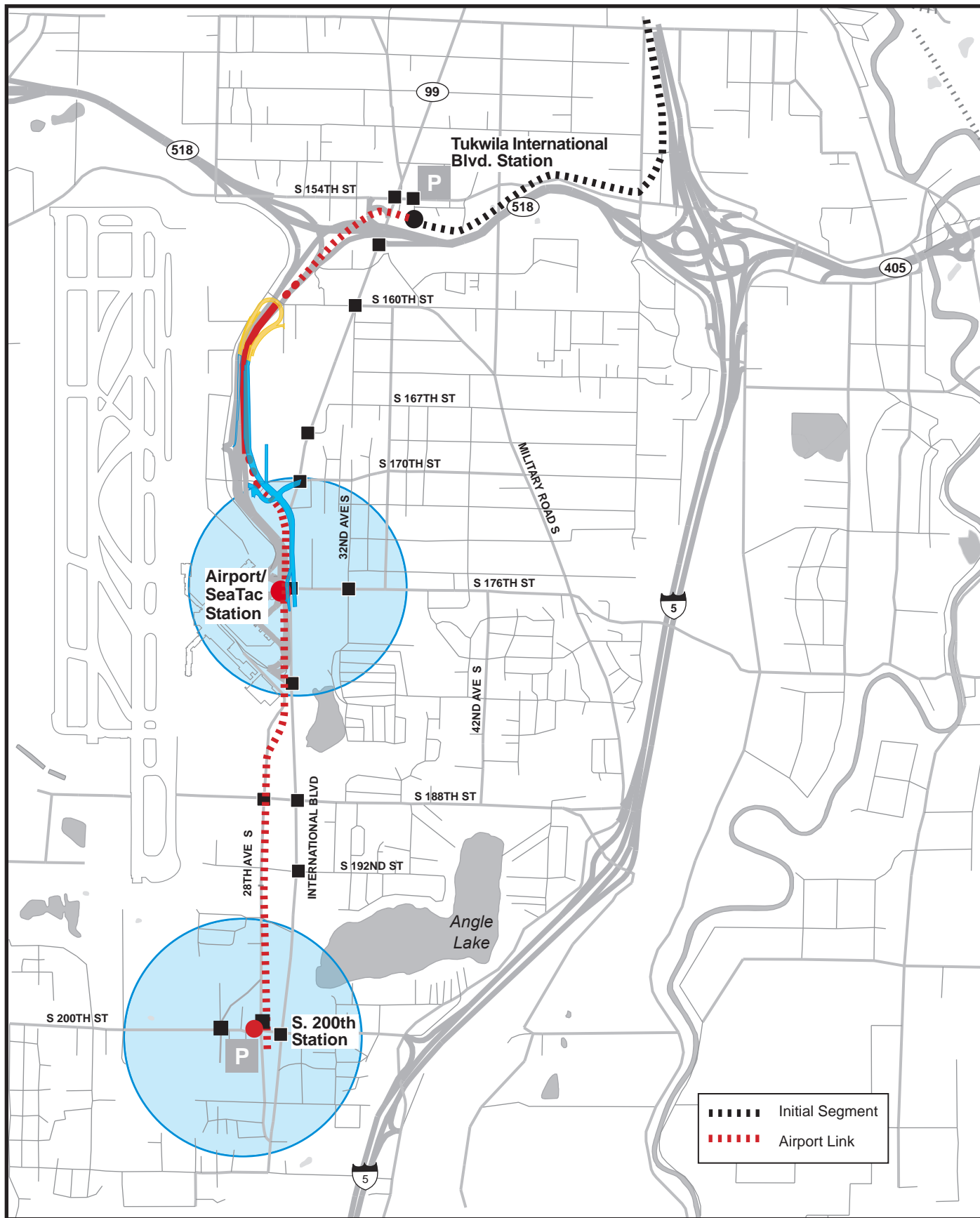
Level of service (LOS) is a measure of operational conditions and their perception by drivers; it also describes the quality of traffic operations on roadway facilities. The Highway Capacity Manual provides a widely accepted methodology for calculating LOS at signal-controlled intersections. At these intersections, LOS relates to the average delay experienced by all vehicles as they approach the intersection. Table 3.1-4 summarizes the relationship between LOS and average delay for signalized intersections.

Table 3.1-4
Level of Service Criteria for Signalized Intersections

Level of Service	Average Delay (seconds per vehicle)	Traffic Flow Characteristics
A	< 10.0	Virtually free flow; completely unimpeded.
B	> 10.0 to < 20.0	Stable flow with slight delays; less freedom to maneuver.
C	> 20.0 to < 35.0	Stable flow with delays; less freedom to maneuver.
D	> 35.0 to < 55.0	High density but stable flow.
E	> 55.0 to < 80.0	Operating conditions at or near capacity; unstable flow.
F	> 80.0	Forced flow; breakdown conditions.

Source: Highway Capacity Manual, 2000.

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- Elevated
- At Grade
- Retained Cut-Fill
- Station
- Related Roadway Improvements

- Indirect Parking Impact Analysis Location
- LOS Analysis Conducted
- P Park and Ride
- S. 160th Street Loop Ramp Project

**Figure 3.1-1
Airport Link
Transportation
Study Area**

As described in Table 3.1-4, LOS ratings range from A to F. LOS A represents the best operation, and LOS F represents the poorest. LOS D is usually considered the minimum acceptable standard in urban areas; with this level of service, some delays are expected for certain traffic movements.

The City of Tukwila has developed LOS standards for its central business district (Southcenter area) and residential areas. According to these standards, LOS E, with a v/c ratio less than or equal to 1.0, would be acceptable for intersections and arterials within the central business district. LOS D, with a v/c ratio less than or equal to 0.90, would be acceptable for residential areas. Individual intersections and/or arterial roadways may exceed the area LOS standard as long as the area average meets the standard.

The City of SeaTac's LOS standards for arterial routes consider LOS E or better as acceptable. LOS D or better would be considered acceptable on Collector Arterials and lower classification streets. Some exceptions to these standards exist where improvements are planned or where improvements are not considered feasible.

Table 3.1-5 summarizes LOS analysis results for existing PM peak hour conditions at project area intersections. The PM peak hour was used for this analysis because that is when the roadway network experiences the highest traffic volumes and congestion levels. The LOS analysis indicates that all intersections are currently operating at LOS D or better during the PM peak hour.

**Table 3.1-5
Peak Hour Level of Service Summary for Existing Conditions (Year 2004)**

Analysis Location	Volume-to-Capacity ¹	Average Delay (Seconds)	LOS	Approach Volumes (2004)			
				NB	SB	EB	WB
International Boulevard at S. 154th Street	0.77	36.0	D	455	1086	627	737
International Boulevard at SR 518 EB On-Ramp	0.49	1.6	A	1170	2858	N/A	N/A
International Boulevard at S. 160th Street	0.73	18.1	B	967	1279	226	347
International Boulevard at S. 167th Street	0.51	4.8	A	1064	1004	0	61
International Boulevard at S. 170th Street	0.93	22.2	C	1076	923	798	297
International Boulevard at S. 176th Street	0.75	14.0	B	1018	1288	N/A	540
S. 176th Street at 32nd Avenue S.	0.52	7.2	A	295	98	420	474
International Boulevard at S. 182nd Street (Airport Driveway)	0.76	13.4	B	1290	1332	390	43
International Boulevard at S. 188th Street	0.83	32.6	C	1195	1455	1364	919
28th Avenue S. at Air Cargo Road S./ S. 188th Street	0.55	18.5	B	217	109	1371	900
International Boulevard at S. 192nd Street	0.66	10.3	B	1138	1427	145	84
International Boulevard at S. 200th Street	0.98	42.8	D	1063	1454	688	512
S. 200th Street at 28th Avenue S. ²	0.57	15.0	B	87	132	589	404
S. 200th Street at 26th Avenue S.	0.45	15.2	B	175	175	539	333

Source: Parametrix, November 2004.

¹ The reported volume-to-capacity ratio is for the lane group (left, through, right, etc.) with the highest v/c ratio. It is not the average v/c ratio for the intersection, which would be lower.

² Unsignalized intersection. Intersection LOS is assigned based on average delay of the intersection.

Comparison to the Central Link Final EIS

The updated LOS results shown in Table 3.1-5 for the year 2004 are comparable to the LOS results in the Central Link Final EIS (Sound Transit 1999). There are some minor differences due to changes in traffic modeling methodologies and software between the time of the 1999 Central Link Final EIS and today.

Specifically, the level of service criteria for signalized intersections used in the Central Link Final EIS has since been updated and adopted by the transportation planning industry and the criteria now allow for longer delays at each LOS rating. For many of the project area intersections, intersection traffic volumes have decreased compared to the existing traffic volumes shown in the Central Link Final EIS. This decrease in traffic is primarily due to the substantial decline in air travel and overall economic activity around Sea-Tac Airport experienced after September 2001. For intersections with higher traffic volumes, increases were not substantial, ranging between 49 and 180 vehicles per hour.

Traffic Accidents

Three years of traffic accident data relating to the study intersections was collected from the City of SeaTac (covering August 2001 to August 2004). In that span of time, 54 accidents occurred that were reported to include one or more injuries and 93 accidents occurred where property damage only (PDO) was reported. There was one accident with two fatalities at the International Boulevard/S. 170th Street intersection. Table 3.1-6 shows the number of average annual accidents categorized by type between August 2001 and August 2004.

Table 3.1-6
2001–2004 Average Annual Accident Frequency by Type

Location (Intersection)	PDO ¹	Injury	Fatality	Total ²	Accidents Per Million Entering Vehicles
International Boulevard/S. 154th Street	12	5	0	19	0.59
International Boulevard/SR 518 EB On-Ramp	0	1	0	1	0.02
International Boulevard/S. 160th Street	10	6	0	20	0.74
International Boulevard/S. 167th Street	2	3	0	5	0.20
International Boulevard/S. 170th Street	15	8	1	29	0.95
International Boulevard/S. 176th Street	5	6	0	13	0.53
S. 176th Street/32nd Avenue S.	4	3	0	8	0.86
International Boulevard/S. 182nd Street (Airport Driveway)	6	3	0	9	0.27
International Boulevard/S. 188th Street	16	7	0	27	0.61
28th Avenue S./Air Cargo Road S./S. 188th Street	2	2	0	5	0.27
International Boulevard/S. 192nd Street	6	3	0	10	0.33
International Boulevard/S. 200th Street	15	8	0	26	0.74
S. 200th Street/28th Avenue S.	1	1	0	4	0.41
S. 200th Street/26th Avenue S.	0	0	0	0	0.03

Source: City of SeaTac, 2004.

¹ Property damage only.

² The total can be higher than the sum of PDOs, injuries, and fatalities because of accidents that were recorded but not categorized.

Intersections with greater than one accident per million entering vehicles are considered as having a relatively high accident rate (Institute of Transportation Engineers [ITE] 2004). As shown in Table 3.1-6, none of the intersections within the Airport Link project area has an accident rate greater than one per million entering vehicles.

As a result of the improvements to International Boulevard, accident rates have decreased from the levels reported in the 1999 Central Link Final EIS. Improvements completed in the project corridor since 1996 include reconstruction of all of the intersections along International Boulevard between S. 170th Street and S. 200th Street and the intersection of S. 176th Street and 32nd Avenue S. The east side of International Boulevard between S. 200th Street and S. 216th Street is also currently under reconstruction. The accident

rate per million entering vehicles decreased from 0.75 to 0.59 at the International Boulevard/S. 154th Street intersection, from 0.86 to 0.74 at the International Boulevard/S. 160th Street intersection, from 0.32 to 0.02 at the SR 518 eastbound on-ramp/International Boulevard intersection, and from 0.48 to 0.27 at the International Boulevard/S. 182nd Street/Airport Drive intersection. Accident rates have increased slightly at the other project area intersections but most notably at the International Boulevard/S. 170th Street and S. 176th Street/32nd Avenue S. intersections, which increased from 0.55 to 0.95 and 0.35 to 0.86 accidents per million entering vehicles, respectively.

Parking Supply and Demand

Airport Link has the potential to increase parking demand if light rail patrons try to find parking in areas near the stations. This behavior is referred to as “hide-and-ride” parking. Therefore, the potential parking supply that might be attractive for hide-and-ride parking was identified within a 2,000-foot radius of the proposed Airport Link stations. Parking demand was estimated to determine how much hide-and-ride activity could occur around the Airport Link stations. The types of parking that would accommodate hide-and-ride activity are on-street unrestricted public parking or off-street public parking. The off-street public parking inventory includes private pay commercial lots intended to serve airport travelers. However, these facilities are open to anyone paying the parking fees. Currently, on-street unrestricted parking generally serves overflow from private residences and apartment buildings and does not have time restrictions or fees. However, the majority of roads in the project area have insufficient shoulder widths to accommodate on-street parking. Off-street public parking in the station areas is primarily associated with long-term airport public parking facilities, apartments, hotels, or businesses, and users are typically required to pay a fee or to have parking permits. The average price of paid parking in the area as of November 2004 was \$13.63 per day.

The City of SeaTac has transportation demand management (TDM) strategies in place to help manage the demand on existing transportation facilities. Many employers in SeaTac, including the Port of Seattle, offer employees various incentive programs, such as the comprehensive FlexPass, to commute by transit or to rideshare. Transit ridership among participating SeaTac employers has grown from less than 1 percent to over 15 percent since 1998. Vanpooling has also grown to several hundred riders over the same period.

Employees of airport businesses may purchase monthly parking passes for \$46, and Port of Seattle employees are provided free parking. Employees may park at off-site lots located north and south of the airport, and Port of Seattle employees use the airport garage. Employees using off-site lots are transferred to the airport in a bus shuttle. Employee bus shuttles arrive every 15 minutes and operate 24 hours a day, 7 days a week.

The number of on-street unrestricted and off-street public parking spaces in the vicinity of each station area is shown in Tables 3.1-7 and 3.1-8 below. Land uses within the area that currently utilize the available parking include retail, office, hotel, airport parking, rental car facilities, and residential. On-street unrestricted parking supply and utilization rates are relatively low due to the lack of residential land uses in the station areas and the available supply of off-street private parking by area businesses.

Airport/SeaTac Station

The Airport/SeaTac Station parking area is generally bounded by the North Airport Expressway to the west, S. 182nd Street to the south, S. 167th Street to the north, and 34th Avenue S. to the east (see Figure 3.1-1). Public parking in the Airport/SeaTac Station vicinity is located primarily to the east of International Boulevard, with many long-term airport public parking facilities along International Boulevard to the north and south. There is a limited supply of on-street unrestricted parking located in the residential areas generally located to the east of 32nd Avenue S. The parking supply, demand, and utilization rates within this general area are shown in Table 3.1-7. The overall parking utilization is approximately 61 percent within the Airport/SeaTac Station vicinity.

**Table 3.1-7
Airport/SeaTac Station Area Parking Utilization**

Parking Type	Supply	Demand	Percent Utilization (%)
On-Street Unrestricted	233	46	20
Off-Street Public	3,965	2,532	64
Totals	4,198	2,578	61

Source: Parametrix, January 2005.

S. 200th Station

The S. 200th Station parking area is generally bounded by 26th Avenue S. on the west, S. 204th Street on the south, S. 196th Street on the north, and 35th Avenue S. on the east (see Figure 3.1-1). The parking supply, demand, and utilization rates within this general area are shown below in Table 3.1-8. The overall parking utilization is 56 percent for the S. 200th Station area. Parking is distributed relatively evenly among three of four quadrants of the parking area as delineated by International Boulevard and S. 200th Street. The northwest quadrant has a nominal number of parking spaces as this area is largely owned by the Port of Seattle.

**Table 3.1-8
S. 200th Station Area Parking Utilization**

Parking Type	Supply	Demand	Percent Utilization (%)
On-Street Unrestricted	355	51	14
Off-Street Public	1,324	887	67
Totals	1,679	938	56

Source: Parametrix, January 2005.

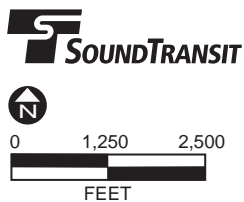
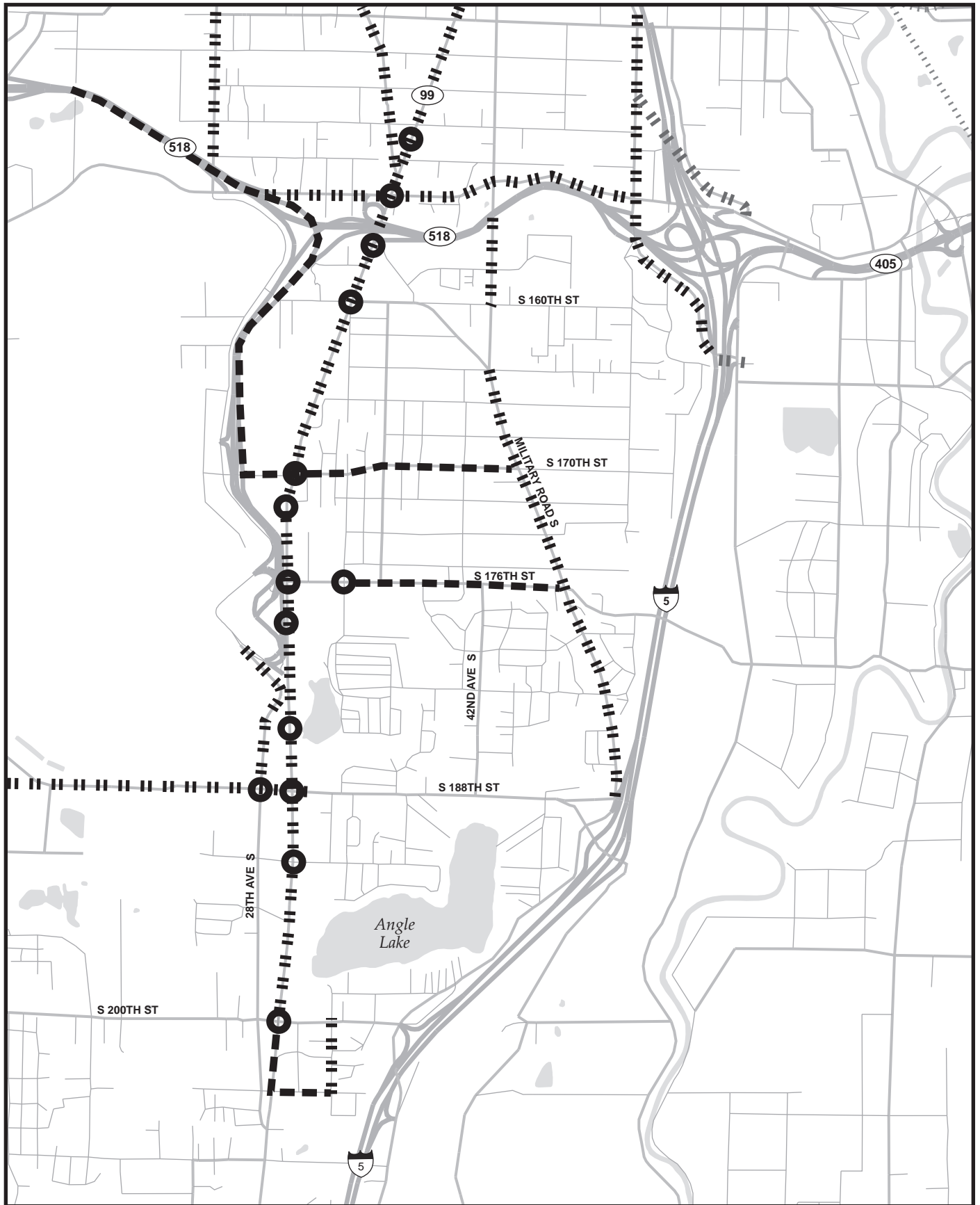
Comparison to the Central Link Final EIS

With the decline in air travel and associated traffic volumes along the corridor, existing parking demand was found to be the same or lower within the project area compared to the 1999 Central Link Final EIS. On-street unrestricted parking supply and utilization rates are low.

In the 1999 Central Link Final EIS, on-street restricted and off-street restricted spaces were included in the station vicinity parking inventories. These categories were not included in the Airport Link parking data; there are no on-street restricted parking spaces within either station area. It was also assumed that light rail patrons would not use the off-street private parking spaces, because most of the off-street parking on private properties is paid, by permit, or otherwise restricted to discourage airport patrons or others from using private parking for non-business purposes.

3.1.1.6 Non-motorized Transportation

For Airport Link, the survey of pedestrian and bicycle facilities conducted for the SeaTac area study intersections in the 1999 Central Link Final EIS was updated with recent field survey information. The pedestrian and bicycle facilities within the Airport Link transportation project area are shown in Figure 3.1-2. For the Central Link Final EIS, a 0.5-mile analysis area was assumed for pedestrians and a 1-mile analysis area was assumed for bicycles. These distances are assumed to be the limit for potentially affected pedestrian and bicycle facilities.



- Pedestrian Crossings
(Midblock or along at-grade alignments)
- Regional Trail
- On Street Bicycle Lane
- Wide Curb Lane or Shoulder

Figure 3.1-2
Signalized Pedestrian
Crossings and Bicycle Facilities
in Airport Link Study Area

Bicycle and pedestrian activity was observed to be relatively low within 0.5- to 1-mile of the station. Field observations made as part of the S. 154th Street Park-and-Ride Lot Traffic Impact Analysis (DKS Associates 2004), which was conducted in June 2004 when bicycle activity would be the highest, noted less than 10 bicycles per hour. For the majority of the project area, most bicycle travel takes place along or in roadway travel lanes because most streets do not have shoulders. Pedestrians must also walk alongside roadway travel lanes throughout much of the project area, except along reconstructed sections of International Boulevard (from the south end of the SR 518 overpass to S. 200th Street) where sidewalks are present. Other study area roadways that have sidewalks include S. 176th Street, S. 200th Street, and 33rd and 34th Avenues S. between S. 170th and S. 175th Streets. Residential areas generally do not have sidewalks or paved shoulders. In Appendix E, Table E-1 lists the missing sidewalk sections in the Airport Link study area.

To help estimate the potential increase in pedestrian traffic in the airport vicinity, select ridership information was collected. Daily boardings and alightings at the International Boulevard bus stops immediately adjacent to the airport are shown in Table 3.1-9. These bus stops are serviced by Metro Transit routes 140, 174, and 191. Bus passengers currently use at-grade crosswalks at signalized intersections to access bus stops along International Boulevard.

Table 3.1-9
Daily Boardings and Alightings for International Boulevard Bus Stops in the Sea-Tac Airport Vicinity

	Northbound Stops			Southbound Stops		
	Boardings	Alightings	Total	Boardings	Alightings	Total
S. 170th Street/International Boulevard	72	35	107	40	79	119
S. 176th Street/International Boulevard	112	56	168	45	98	143
S. 182nd Street/Airport Drive/International Boulevard	36	35	71	46	18	64

Source: Data provided by Metro Transit (March 2005).

As shown in Table 3.1-9, the stop with the highest amount of pedestrian activity is at the S. 176th Street/International Boulevard northbound stop, with 168 pedestrians accessing the stop per day. These counts were used to perform a general pedestrian LOS analysis, as it was assumed that the sidewalks throughout the Airport Link project area would have less than this number of pedestrians. The Highway Capacity Manual 2000 and TCQSM methodology for determining sidewalk LOS for pedestrian travel was used. It was assumed that, at a minimum, a 5-foot effective sidewalk width for arterial streets would be provided on all sidewalks within the analysis areas.

Assuming that 40 percent of the riders (or 67 people) access the bus stops on International Boulevard near S. 176th Street in each peak, the pedestrian LOS on the sidewalks providing access to the bus stops would be LOS A. Even if all 168 riders accessed the stops at the same time, the pedestrian LOS on the sidewalks would be LOS B, which is well above LOS F.

Bus transportation is provided for all students who must cross International Boulevard to get to school. School walk route information obtained from the Tukwila and Highline School Districts was used to determine the location of existing walk routes that cross or are adjacent to Airport Link. There are no school walk routes that would cross or be adjacent to the Airport Link alignment or stations.

The City of SeaTac Transportation Improvement Program 2005–2014 has identified and funded many sidewalk projects within the Airport Link project area to improve pedestrian and bicycle safety and connectivity throughout the city.

Comparison to the Central Link Final EIS

Pedestrian (sidewalks) and bicycle facilities have been improved along International Boulevard and some east/west arterials within the project area as a part of recent widening and reconstruction to improve pedestrian and bicyclist mobility and safety (see Figure 3.1-2).

3.1.2 Regional Travel and Transit Impacts

3.1.2.1 Highway and Street Impacts

This section discusses the effects Airport Link would have on regional travel. Regional travel factors analyzed include vehicle miles traveled (VMT) and vehicle hours traveled (VHT). Table 3.1-10 compares year 2015 and 2030 No-Build and Airport Link conditions for these performance measures for the AM and PM peak periods, off-peak periods, and daily totals. These comparisons assume that Central Link would be completed from Northgate to Tukwila International Boulevard Station as a part of the No-Build condition, with the Airport Link condition assuming the completion of the light rail to S. 200th Station. In both 2015 and 2030, Airport Link would result in a decrease of 0.01 to 0.03 percent in both VMT and VHT over No-Build conditions. VMT and VHT reductions for the Airport Link condition would be similar, with an interim terminus at the Airport/SeaTac Station.

Table 3.1-10
Regional Travel Impact Comparison Summary, 2015 and 2030 Conditions

Criteria	Year 2015			Year 2030		
	No-Build ¹	Airport Link ²	Change from No-Build (%)	No-Build ¹	Airport Link ²	Change from No-Build (%)
VMT						
AM Peak	12,410,003	12,408,661	-0.01%	13,947,913	13,943,945	-0.03%
Off Peak	40,805,517	40,801,104	-0.01%	45,811,576	45,798,544	-0.03%
PM Peak	17,333,099	17,331,224	-0.01%	19,597,837	19,592,262	-0.03%
Total Daily	70,548,619	70,540,989	-0.01%	79,357,326	79,334,751	-0.03%
VHT						
AM Peak	433,150	433,103	-0.01%	517,161	517,014	-0.03%
Off Peak	1,457,016	1,456,858	-0.01%	1,754,579	1,754,080	-0.03%
PM Peak	657,701	657,630	-0.01%	812,982	812,750	-0.03%
Total Daily	2,547,867	2,547,591	-0.01%	3,084,722	3,083,844	-0.03%

Sources: PSRC regional travel model and Sound Transit ridership model.

¹ No-Build = Northgate – Tukwila International Boulevard Station

² Build = Northgate – S. 200th Station

3.1.2.2 Light Rail Ridership

The projected year 2015 and 2030 Airport Link ridership for the Airport/SeaTac and S. 200th Stations is shown in Table 3.1-11. As shown in Table 3.1-11, daily boardings at the Airport/SeaTac Station would decrease slightly with a S. 200th Station terminus, as some riders would divert to that station. The number of total daily system-wide boardings assumes a terminus at the S. 200th Station.

Table 3.1-11
Airport Link Daily Station Usage (Boardings)¹

Station	Year 2015	Year 2030
Airport/SeaTac Station	3,500	4,000
S. 200th Station	3,500	4,500
Airport/SeaTac Station (terminus)	4,500	5,000
Total Daily System-Wide Boardings	115,500	165,500

¹ All boardings include the Central Link Initial Segment and North Link to Northgate.

The Sound Transit model considers a light rail line to be the same as a bus line, ignoring any improvement in reliability, visibility, and ease-of-use. Because these factors are especially important for out-of-town travelers, the Sound Transit model may tend to underestimate the number of riders at the Airport/SeaTac Station. To account for any potential underestimation, Sea-Tac Airport has been treated as a special trip generator, and working in conjunction with Port of Seattle staff, Sound Transit developed an estimate of light rail ridership at the Airport/SeaTac Station generated by the airport. This estimate was used to increment the ridership forecast for the Airport/SeaTac Station produced by the Sound Transit model. For example, the Sound Transit model produced a 2015 forecast of 2,000 daily boardings at the Airport/SeaTac Station when the station is the southern light rail terminus. Based on the treatment of the airport as a special trip generator, this forecast was increased to 4,500 daily boardings for this analysis. Therefore, the Sound Transit model forecast for the Airport/SeaTac Station, which includes ridership from both the city of SeaTac and Sea-Tac Airport, was more than doubled for the purpose of analyzing environmental impacts. This provides a conservatively high level of ridership to use in evaluating environmental impacts.

Daily and PM peak period ridership forecasts for each Airport Link station are summarized by mode in Table 3.1-12 for the years 2015 and 2030. Passenger drop-offs and pick-ups are included in the walk-on and walk-off numbers.

Table 3.1-12
2015 and 2030 PM Peak Period Ridership, Person and Automobile Demand for Airport Link

Station	Daily Ridership	Three-Hour PM Peak Period Ridership						Total
		Walk -On	Walk -Off	Transit Access	Transit Egress	Park-and-Ride	Park-and-Ride	
						Person Demand ¹	Automobile Demand ²	
Year 2015								
Airport/SeaTac Station (terminus)	4,500	570	130	610	60	N/A	N/A	1,370
S. 200th Station	3,500	70	150	560	760	310	280	2,130
Year 2030								
Airport/SeaTac Station (terminus)	5,000	730	190	660	160	N/A	N/A	1,740
S. 200th Station	4,500	90	200	670	1110	420	380	2,870

Source: Sound Transit, December 2004.

¹ Person demand is the number of people using the park-and-ride.

² Auto demand is the number of vehicles parking at the park-and-ride.

Passenger drop-off assumptions provided by Sound Transit for each station were 4 percent of total ridership for the Airport/SeaTac Station and 20 percent of the total park-and-ride person demand for the S. 200th Station and park-and-ride. These percentages were developed based on information provided in the

Banfield LRT Station Model of Access Survey (Parsons Brinckerhoff and Tri-Met 1996) for stations in the Portland area that have similar characteristics to proposed Link stations.

For purposes of establishing station area activity and mode of access, Sound Transit assumed that Airport/SeaTac Station riders generated by Sea-Tac Airport would be 50 percent air passengers and 50 percent airport employees. This assumption of trip purposes was based on a survey conducted by Sound Transit of five different airports around the country with direct rail connections, as well as bus ridership patterns at the airport determined by a King County Metro Transit survey of bus riders at airport bus stops.

Because Sea-Tac Airport is a major employment center, there would be more walk access passengers than walk egress passengers at Airport/SeaTac Station in the PM peak, as airport employees would be accessing light rail to commute home. There would also be more bus access passengers than bus egress passengers because it was assumed that the employees at many of the airport-related businesses located on or near International Boulevard would access Airport/SeaTac Station by bus transfers from buses on International Boulevard. Also, Metro Transit's bus service integration plans call for much of the local bus service to South King County communities, including the City of SeaTac, to connect with light rail at the Tukwila International Boulevard Station in Tukwila and at the S. 200th Station in SeaTac. Therefore, light rail passengers commuting from Seattle to SeaTac would be more likely to make bus transfers to their final destinations at either of these two stations than at Airport/SeaTac Station.

Ridership at the Tukwila International Boulevard Station would decrease from 4,500 daily boardings for the No-Build alternative to 2,000 (with S. 200th Station terminus) or 3,000 (with Airport/SeaTac Station terminus) daily boardings with Airport Link in the year 2015. In the year 2030, ridership at the Tukwila International Boulevard Station would decrease from 6,000 daily boardings for the No-Build alternative to 3,000 (with S. 200th Station terminus) or 4,000 (with Airport/SeaTac Station terminus) daily boardings for Airport Link. Since ridership at the Tukwila International Boulevard Station is lower with either the Airport/SeaTac Station or S. 200th Station terminus, the No-Build alternative would have the highest ridership at this station.

In comparison with the original project, the total daily system boardings and boardings at the Airport/SeaTac and S. 200th Stations for Airport Link in 2020 are similar to the original project. The Airport/SeaTac Station would have similar boardings as those that were anticipated for the provisional station at S. 184th Street and the North End Airport Terminal Station combined, which were part of the original project.

3.1.2.3 *Transit System*

Regional Transit Service

With Airport Link, it is expected that the existing Sound Transit Express routes 560 and 574 would continue operating as they do today. Overall transit service would improve with Airport Link because it provides another transportation option and increases the transit service coverage area and overall transit capacity. Airport Link would connect to the Tukwila International Boulevard Station of the Central Link Initial Segment with high capacity, higher speed, high reliability, and frequent trips to common destinations in the area. Table 3.1-13 compares bus capacity with light rail capacity and shows that light rail service would increase the capacity, and therefore public transportation service levels, in the region.

Airport Link is anticipated to operate 20 hours per day from 5:00 AM to 1:00 AM on weekdays and 7:00 AM and 1:00 AM on weekends with 6-minute headways in the peak hours in 2015 and 5-minute headways in the peak hours in 2030. This is similar to or better than service provided on the major bus routes in the project area. Transit riders making trips where the origin and destination are both served directly by Link would have the greatest travel time benefits: shorter waits, no transfer times, and high in-vehicle speeds. Because Airport Link is in its own exclusive right-of-way, it will offer a faster and more reliable connection than buses on International Boulevard between either S. 200th Street or Airport/SeaTac Station and the Tukwila International Boulevard Station at S. 154th Street. Light rail is expected to operate in the 95 to 99 percent on-time range, which is difficult for buses to achieve.

**Table 3.1-13
Comparative Capacity Per Service Hour**

Vehicle	Seated Load	Total Load ¹	Comparative Capacity²
40-Foot Bus	40	60	1.0
60-Foot Bus	60	90	1.5
2-Car Train	144	240–288	4.0–4.8
3-Car Train	216	360–432	6.0–7.2
4-Car Train	288	481–572	8.0–9.5

Notes: ¹ Bus total load equals 1.5 times seats. The Link assumption is 72 seat cars. Link service criteria allow a load factor of 2.0. Portland operates at about 1.8 load factor in peak periods. The Link operational analysis assumes a 1.67 load factor. The range for total load to seated load used above is from 1.67 to 2.0. The operating plan assumption is three-car trains for service in 2015 and four-car trains for service in 2030.

² Comparative capacity indicates the relative passenger capacity (total load) for each vehicle divided by the total load for a 40-foot bus.

With the No-Build alternative and the shuttle connection between Tukwila International Boulevard Station and Sea-Tac Airport, the approximate travel time is estimated to be at least 12 minutes. This travel time assumes that shuttle departures would be timed to coincide with light rail arrivals and that the shuttle would drop passengers at the courtesy vehicle area that coincides with their airline. This travel time includes the transfer time from light rail to the shuttle and the walk time between the shuttle drop-off area and the airport terminal.

With Airport Link, the light rail run time between the Tukwila International Boulevard and Airport/SeaTac Stations would be 2.4 minutes and the walk time from the Airport/SeaTac Station to the airport terminal would be 7 minutes for a total travel time of 9.4 minutes. At the very least, Airport Link would result in a 2.6-minute travel time savings between the Tukwila International Boulevard Station and the main airport terminal. These travel times do not include transfer or out-of-vehicle penalties.

Also with Airport Link, transit providers could end up with a net gain in deployable transit service hours, and some of these hours are likely to be used to extend service on some bus routes to match Link operating periods more closely or provide additional feeder routes to Airport Link stations. While overall transit service levels will be much higher with Link, some individual routes or route segments may have reduced frequency or be rerouted due to the service restructuring.

Local Transit Service

Local transit service is expected to continue much as it is today with some restructuring of routes as well as the addition of feeder bus routes to the Tukwila International Boulevard and S. 200th Stations. Any shortened bus routes are likely to experience a greater degree of reliability. As of December 2004, Metro Transit has indicated the potential for the following route changes:

- Route 140 would not operate along International Boulevard to the Sea-Tac Airport but could instead continue to Burien along S. 154th Street.
- Route 170 would no longer operate to downtown Seattle but would become a feeder route from areas north and south of the Tukwila International Boulevard Station and it would terminate at the station.
- Route 174 would follow its current routing between downtown Seattle and International Boulevard/S. 154th Street and would terminate at the Tukwila International Boulevard Station.
- Route 184 would be a new route serving Des Moines, S. 200th Street and S. 200th Station, Military Road, S. 176th Street, Airport/SeaTac Station, and International Boulevard and would terminate at the Tukwila International Boulevard Station.
- Route 191 would maintain its current operations with an Airport/SeaTac Station terminus but would be discontinued with a S. 200th Station terminus.

- Route 194 would continue its current operations.
- Route 199 would be a new route that would essentially replace the southern portion of the existing Route 174 and would serve the Airport/SeaTac and S. 200th Stations.

The conceptual designs for the Airport/SeaTac and S. 200th Stations include options to accommodate the restructuring of routes in the area or the continuation of existing bus transit service characteristics. Under either scenario, bus service could be accommodated at the existing stops along International Boulevard and Airport Drive. Potential bus routes that would serve the Airport/SeaTac and S. 200th Stations are shown in Appendix C.

The Airport/SeaTac Station would improve connectivity to the Sea-Tac Airport for pedestrians and local transit riders along International Boulevard with a grade-separated crossing of International Boulevard. Southbound bus transit riders would continue to use the at-grade crossing at S. 176th Street and International Boulevard to access the pedestrian overpass, but the Airport/SeaTac Station connection to the airport would provide an alternative to accessing the airport via the bus stop at S. 182nd Street/Airport Drive/International Boulevard. Currently, northbound bus patrons accessing the airport from routes that serve International Boulevard must cross International Boulevard at-grade at the S. 182nd Street/Airport Drive intersection.

The roadway modifications for Airport Link would shift portions of the North Airport Expressway currently used by transit and would close the airport terminal recirculation ramps near the terminal parking garages. However, these modifications are not anticipated to affect travel times for transit routes. For some routes (primarily from the south), the closure of the recirculation ramps to the lower airport access driveways would increase transit travel distances and times. However, bus routes would also be subject to increased delays with the current configuration for circulation in the airport, due to congestion on the airport driveways. The S. 160th Street Loop Ramp project is expected to reduce overall congestion and traffic volumes on the airport driveways; therefore, overall transit travel times in the area are anticipated to be the same or better than the No-Build condition and reliability is expected to improve.

3.1.3 Local Traffic Impacts with Airport Link

3.1.3.1 Surface Street Traffic Impacts

Traffic forecasts prepared for the years 2015 and 2030 indicate that background traffic volumes will increase over existing conditions without Airport Link. In comparison to the background growth in traffic volumes, the vehicle trips associated with Airport Link are relatively minor. Vehicle trips associated with Airport Link would be within the range reported in the 1999 Central Link Final EIS. Background and Airport Link traffic volume forecasts, baseline transportation network condition forecasts, and the resulting PM peak hour intersection capacity analysis results are summarized by alternative in the following sub-sections.

Traffic Volume Forecasts

Background Traffic Growth

A 2.3 percent average annual compounded growth rate was used to estimate future traffic volumes for the year 2015 project alternatives. For the year 2030 project alternatives, a 2.3 percent average annual compounded growth rate was used to estimate future traffic volumes for those intersections north of S. 82nd Street/Airport Way and a 1.2 percent annual compounded growth rate was used for intersections south of S. 182nd Street/Airport Way. Two different growth rates were used for the intersections north and south of S. 182nd Street/Airport Way in 2030, because it was assumed that the South Airport Expressway would be in place by then and, as a result, traffic volumes on International Boulevard would increase at a lower rate.

These background traffic growth rates were developed for the No-Build and Airport Link alternatives based on a review of traffic volumes and traffic network assumptions from the Joint Transportation Study published in July 2003 and are consistent with regional plans and growth estimates. The Joint Transportation

Study was a combined study for the City of SeaTac and the Port of Seattle to comprehensively and jointly address transportation issues that span both jurisdictions. The Joint Transportation Study became part of an interlocal agreement established between the City of SeaTac and the Port of Seattle in 1997. Refer to the Airport Link Transportation Analysis Assumptions Technical Memorandum for additional information (December 2004). As in the 1999 Central Link Final EIS, the background roadway network and intersection configurations were assumed to be generally the same as they are today, with the background traffic growth rates intended to capture any changes in area traffic volumes that would occur if the South Airport Expressway is constructed by the year 2030.

Year 2015 and Year 2030 No-Build Transportation Network Conditions

For the year 2015 and 2030 No-Build alternative, it was assumed that the following changes to the transportation network would be in place:

- The Central Link Light Rail Initial Segment, including the Tukwila International Boulevard Station and Park-and-Ride
- The North Link Light Rail (to Northgate)
- The Port of Seattle Rental Car Facility (including the Bus Maintenance Facility in the vicinity of S. 160th Street west of International Boulevard)
- The Port of Seattle S. 160th Street Loop Ramp project

Future PM peak hour vehicle trips generated by the Tukwila International Boulevard Station and Park-and-Ride were included in the year 2015 and 2030 No-Build traffic volumes. Also by the year 2015, the Port of Seattle bus (shuttle) maintenance facility would be in place, and one of the possible locations is on S. 160th Street, west of International Boulevard. Vehicle trips created in the PM peak hour by this facility are expected to be low (five or less) and were assumed to be captured in the relatively high background traffic volume growth rates being used for the year 2015 and 2030 No-Build alternatives. Relocation of rental car operations from the parking garage to a consolidated facility would also decrease traffic volumes on the North Airport Expressway.

For the year 2030 No-Build alternative only, it was assumed that the following changes to the transportation network would be in place, in addition to the changes noted for 2015:

- SR 509 Extension (Des Moines Memorial Drive S. to I-5)
- South Access Expressway (Airport Drives to SR 509 Extension)

The South Airport Expressway and SR 509 Extension improvement projects are a high priority for Washington State Department of Transportation (WSDOT), Port of Seattle, and other local agencies to complete; however, funding for construction is not currently in place to assume project completion by the year 2015. No improvements are assumed prior to 2015, which provides a conservatively high assumption for year 2015 No-Build traffic volumes on International Boulevard south of S. 182nd Street/Airport Way, since the South Airport Expressway would reduce traffic volumes on this section of International Boulevard. As mentioned previously, because it was assumed that these two projects would be in place by the year 2030, two different growth rates were used to forecast the future No-Build traffic volumes for intersections north and south of S. 182nd Street/Airport Way in the year 2030.

Table E-2 in Appendix E lists other transportation improvement projects from the City of SeaTac's 2005–2014 Transportation Improvement Program that were assumed to be complete by the year 2015. No specific adjustments were made to the Airport Link vehicle trip distribution for the LOS analysis as a result of these improvements. However, these improvements would add capacity to the Airport Link transportation network for all vehicles, pedestrians, and bicycles.

Trip Generation

Trip generation for the two Airport Link stations was calculated based on the highest 3-hour PM peak ridership forecasts provided by Sound Transit for the highest ridership alternative at each station. The highest ridership alternative for the Airport/SeaTac Station would occur with a terminus at the Airport/SeaTac Station. Similarly, the highest ridership alternative at the S. 200th Station would occur with a terminus at the S. 200th Station. Vehicle trips in the PM peak hour were assumed to account for 43 percent of the 3-hour peak volumes. At the S. 200th Station, approximately 630 new park-and-ride spaces would be provided with the Airport Link project. To estimate the highest range of vehicle trips that could occur, it was assumed the park-and-ride would be full and that all 630 parking spaces would be used for light rail patrons. As a result, the 271 PM peak hour trips generated in 2015 and 2030 were all assumed to be new to the area, although some trips that would otherwise use the Tukwila International Boulevard Park-and-Ride could use this station instead. The highest ridership transit volume projections provided by Sound Transit were also assumed in the trip generation. For instance, while the extension of Airport Link would decrease demand at the Tukwila International Boulevard Station (see Section 3.1.4.2, Parking), the traffic analysis continues to assume that the higher range of vehicle trips to the Tukwila International Boulevard station would still occur, which provides a conservatively high analysis of the intersection's operations.

The resulting number of vehicle trips that are expected at the Airport Link stations, shown in Tables 3.1-14 and 3.1-15, are based on the ridership projections for Airport/SeaTac Station shown in Tables 3.1-11 and 3.1-12 in Section 3.1.2.3, Transit Service. At park-and-ride stations, it was assumed that the number of park-and-ride vehicle trips would be equivalent to the number of park-and-ride spaces and that passenger drop-off trips would compose 20 percent of the park-and-ride person demand. At non-park-and-ride stations, passenger drop-off trips were assumed to be a percentage of total ridership based on information provided in the Banfield LRT Station Mode of Access Survey (Parsons Brinckerhoff and Tri-Met 1996) for stations in the Portland area that have similar characteristics to proposed Link stations. With the assumption that the 630-space park-and-ride at the S. 200th Station would be full in both years 2015 and 2030, the number of vehicle trips generated does not increase between 2015 and 2030. The number of PM peak hour bus trips shown in Tables 3.1-14 and 3.1-15 is the number of new bus trips associated with Airport Link. These numbers were determined based on conversations with King County Metro Transit in January 2005 on planned bus service changes with Airport Link.

Table 3.1-14
Year 2015 PM Peak Vehicle Trip Generation Summary

Station	Type of Trip	In	Out	Total
Airport/SeaTac Station	Park-and-Ride	N/A	N/A	N/A
	Drop-off	24	24	48
	Buses	2	2	4
	Total	26	26	52
S. 200th Station	Park-and-Ride	111	160	271
	Drop-off	60	60	120
	Buses	2	2	4
	Total	173	222	395

**Table 3.1-15
Year 2030 PM Peak Vehicle Trip Generation Summary**

Station	Type of Trip	In	Out	Total
Airport/SeaTac Station	Park-and-Ride	N/A	N/A	N/A
	Drop-off	30	30	60
	Buses	2	2	4
	Total	32	32	64
S. 200th Station	Park-and-Ride	99	172	271
	Drop-off	60	60	120
	Buses	2	2	4
	Total	161	234	395

There would be a 25 percent increase (12 trips) in passenger drop-off vehicle trips at the Airport/SeaTac Station between 2015 and 2030 (from 48 trips in 2015 to 60 trips in 2030). Passenger drop-offs vary based on total PM peak station ridership, and total PM peak ridership at the station is forecasted to increase 27 percent between 2015 and 2030, as shown in Table 3.1-11 in Section 3.1.2.3, Transit Service.

With Airport Link, vehicle trips at the Tukwila International Boulevard Station would decrease as passenger drop-off and park-and-ride trips shift to the Airport/SeaTac and S. 200th Stations. However, to provide a conservatively high estimate of impacts to the project area intersections, vehicle trips to the Tukwila International Boulevard Station were assumed to remain constant for the No-Build and Airport Link alternatives LOS analysis.

With the related roadway modification projects needed for light rail (described in Section 2.1.5), the S. 170th Street northbound on-ramp to the North Airport Expressway, which connects to SR 518, would be removed. These trips would be redistributed to International Boulevard through the International Boulevard/SR 518 and International Boulevard/S. 188th Street intersections as alternate routes to SR 518, I-5, and I-405 in the years 2015 and 2030. The removal of the S. 170th Street northbound on-ramp would also result in a redistribution of existing trips within the internal airport network and along S. 170th Street and International Boulevard. This redistribution of trips has been included in the Airport Link LOS analysis for the project area intersections for 2015 and 2030.

When Airport Link is in operation, the Radisson Hotel on the southwest corner of the International Boulevard/S. 170th Street intersection will be closed. This hotel has 308 rooms and its closure would remove 178 vehicle trips (53 percent in and 47 percent out) from the PM peak hour in the Airport Link project area (ITE Trip Generation Manual, 6th Edition, 1997). This trip reduction was not applied to the vehicle trips generated by Airport Link in order to provide a conservatively high estimate of impacts to the project area intersections. However, this trip reduction would be higher than the 130 vehicle trips associated with Airport Link's Airport/SeaTac Station.

At Airport/SeaTac Station, it is assumed that the majority of Link patron activity at the Airport/SeaTac Station will originate from within the airport. Some jurisdictions have suggested that there could be the potential for airport patrons to be picked up/dropped off at the light rail station kiss-and-ride instead of at the airport terminals. While this activity is possible, it is difficult to quantify and would likely occur in other locations, such as at the S. 182nd Street/International Boulevard bus stop, with or without the light rail station. In any case, a minor redistribution of existing airport trips to the area might be experienced if some airport patrons accessed the airport by using the station overpass, but the overall vehicle trips to the area, particularly along International Boulevard, would remain the same. In addition, the potential travel time savings for an airport patron, using the light rail station passenger drop-off area versus using the airport's

drop-off areas or short-term parking routes, are anticipated to be minor. Therefore, there would be a low potential for a large number of added trips to occur in this area because of airport patron pick-up/drop-off activity. Airport patron pick-up/drop-off trips would also be more than offset by the decrease in traffic from the Radisson Hotel site, which would no longer be in use.

3.1.3.2 Level of Service Analysis

Table 3.1-16 shows the year 2015 and 2030 intersection volumes for both the No-Build and Airport Link alternatives. As discussed previously, year 2015 volumes were estimated using a 2.3 percent annual compounded growth rate over November 2004 turning movement counts. Year 2030 volumes were estimated using a 2.3 percent average annual compounded growth rate for intersections north of S. 182nd Street/Airport Way and a 1.2 percent annual compounded growth rate for intersections south of S. 182nd Street/Airport Way. These growth rates increase traffic volumes within the Airport Link project area for the No-Build alternative.

These volumes were used to analyze future levels of service for the Airport Link project area intersections during the PM peak hour. Table 3.1-16 shows LOS analysis results for years 2015 and 2030 without and with Airport Link. Synchro 6 (Build 612) traffic modeling software was used for this LOS analysis, which is based on the Highway Capacity Manual (2000) methodology described under Traffic Volumes and Levels of Service. For the Airport Link intersection operations analysis, it was assumed that the traffic signals on International Boulevard would be actuated and coordinated for the progression of northbound and southbound traffic.

The results shown in Table 3.1-16 represent the highest ridership alternative for each of the proposed stations and assume operation of light rail from Northgate for both the year 2015 and 2030. For the Airport/SeaTac Station, the highest ridership alternative would have the interim terminus at this station.

Year 2015 LOS Results

As shown in Table 3.1-16, the analyses indicate that all but one of the study intersections would operate at LOS E or better in the year 2015 with or without Airport Link. The International Boulevard/S. 200th Street intersection would operate at LOS F with an average of 82.5 seconds of delay per vehicle in 2015 without Airport Link. With Airport Link, the International Boulevard/S. 200th Street intersection would continue to operate at LOS F and the average delay per vehicle would increase to 122.1 seconds. This increase is primarily due to the additional vehicle trips that would be associated with the S. 200th Station Park-and-Ride. Only one project area intersection would experience any degradation in LOS with Airport Link. The International Boulevard/S. 188th Street intersection LOS would degrade from LOS D to E but would experience only a 2.1-second per vehicle (less than 1 percent) increase in delay (the LOS E threshold is greater than 55 seconds per vehicle). Operations at the International Boulevard/S. 170th Street intersection would improve from LOS D to C because of a redistribution of vehicle trips through the intersection with the closure of the S. 170th Street northbound North Airport Expressway on-ramp.

Year 2030 LOS Results

As shown in Table 3.1-16, the analyses indicate that all but four of the study intersections would operate at an acceptable LOS (LOS E or better) in the year 2030 with or without Airport Link. The following four intersections would operate at LOS F without or with Airport Link and are listed below along with their associated increases in delay:

- International Boulevard/S. 154th Street (+10.5 seconds)
- International Boulevard/S. 160th Street (+10.5 seconds)
- International Boulevard/S. 170th Street (decrease in overall delay but an increase in cycle length from 140 to 180 seconds)
- International Boulevard/S. 200th Street (+51.5 seconds)

Table 3.1-16
Airport Link PM Peak Hour Level of Service Summary for Years 2015 and 2030

Intersection	Year 2015 No-Build		Year 2015 Airport Link		Year 2030 No-Build		Year 2030 Airport Link	
	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS
International Boulevard/S. 154th Street	60.6	E	65.9	E	154.0	F	164.5	F
S. 154th Street/Tukwila International Boulevard Station	12.8	B	13.1	B	34.4	C	44.5	D
International Boulevard/SR 518 EB On-Ramp	4	A	1.8	A	12.9	B	13.7	B
International Boulevard/S. 160th Street	32.3	C	32.9	C	100.3	F	110.8	F
International Boulevard/S. 167th Street	6.3	A	9.2	A	7.4	A	9.9	A
International Boulevard/S. 170th Street	39.8	D	31.5	C	123.1	F	100.2	F
International Boulevard/S. 176th Street	16.0	B	16.1	B	28.3	C	38.7	D
S. 176th Street/32nd Avenue S.	10.0	A	10.0	A	22.3	C	28.3	C
International Boulevard/S. 182nd Street	19.1	B	19.6	B	23.2	C	26.9	C
International Boulevard/S. 188th Street	54.8	D	56.9	E	66.5	E	76.2	E
28th Avenue S./Air Cargo Road/S. 188th Street	25.2	C	25.3	C	25.4	C	21.0	C
International Boulevard/S. 192nd Street	12.9	B	12.9	B	15.6	B	15.1	B
International Boulevard/S. 200th Street	82.5	F	122.1	F	97.6	F	149.1	F
S. 200th Street/28th Avenue S. ¹	329.3	F	*	A	411.8	F	*	A
S. 200th Street/26th Avenue S.	11.7	B	11.9	B	12.5	B	10.8	B
S. 200th Street/S. 200th Station	-	-	9.6	A	-	-	11.6	B

Source: Parametrix, December 2004 using Synchro 6 (Build 612).

¹ Unsignalized intersection with two-way stop control for north/south movements. Delay and LOS is for the worst approach.

* With Airport Link, 28th Avenue S. will be closed.

Year 2030 LOS analysis results represent conservatively high estimates of intersection operations. Traffic volumes were not reduced even though ridership and parking demand near the Tukwila International Boulevard and Airport/SeaTac Stations is expected when Airport Link is extended to the Airport/SeaTac Station and to S. 200th Street. The analysis found that delays would increase at the International Boulevard/S. 154th Street and International Boulevard/S. 160th Street intersections, primarily because of the increase in vehicle trips associated with the closure of the S. 170th Street northbound North Airport Expressway on-ramp. Delays would decrease at the International Boulevard/S. 170th Street intersection because of a redistribution of trips through the intersection.

Comparison to the Central Link Final EIS

For the SeaTac segment analysis that was performed as a part of the 1999 Central Link Final EIS, LOS was shown to worsen at the following intersections with the original Link project in the year 2010:

- International Boulevard/S. 188th Street intersection LOS worsened from LOS E to F
- S. 200th Street/26th Avenue S. intersection LOS worsened from LOS B to D

With Airport Link, only the International Boulevard/S. 188th Street intersection would experience a degradation in LOS from LOS D to E and would continue to operate above LOS F. The S. 200th Street/26th Avenue S. intersection would operate at LOS B without or with Airport Link. In the 1999 Central Link Final EIS, the following intersections were shown to operate at LOS F without or with the original Link project in the year 2010:

- International Boulevard/S. 167th Street
- International Boulevard/S. 200th Street
- 28th Avenue S./S. 200th Street

Since the time of the 1999 Central Link Final EIS, the International Boulevard/S. 167th Street intersection has been signalized and operates at an acceptable level of service now and in 2015 and 2030 without or with Airport Link.

With Airport Link, operations at the International Boulevard/S. 200th Street would also worsen because of an increase in seconds of delay per vehicle (82.5 to 122.1 seconds). This increase is primarily due to an increase in trips through this intersection because of the S. 200th Station and park-and-ride. With Airport Link, the 28th Avenue S. would be closed to general purpose traffic and therefore operations are shown to improve because traffic on 28th Avenue S. would be diverted to alternative routes.

The 1999 Central Link Final EIS showed that the LOS at the following two intersections would degrade with the project:

- International Boulevard/S. 188th Street (LOS E to F)
- S. 200th Street/26th Avenue S. (LOS B to D)

With Airport Link in 2015, LOS at the International Boulevard/S. 188th Street intersection would also degrade over No-Build conditions from LOS D to E, primarily because of an increase in vehicle trips to and from the S. 200th Station Park-and-Ride.

LOS at the S. 200th Street/26th Avenue S. intersection remains at LOS B without or with Airport Link in 2015. Since the 1999 Central Link Final EIS, capacity at this intersection has been increased as a part of the 28th Avenue S. realignment.

All of the other SeaTac segment intersections that were also analyzed for Airport Link had the same LOS without or with the project, with minor increases in delay. Therefore, in comparison with the original project, Airport Link would have a similar impact on intersection operations in the year 2015 compared to the 1999 Central Link Final EIS analysis for the year 2010.

For year 2020 in the 1999 Central Link Final EIS, the LOS was shown to worsen with the original Link project at the following intersections in the SeaTac segment:

- International Boulevard/S. 154th Street intersection LOS worsened from LOS D to E
- 32nd Avenue S./S. 176th Street intersection LOS worsened from LOS D to E

With Airport Link, intersection LOS would be LOS F without or with the project at the International Boulevard/S. 154th Street intersection, but operations would worsen due to an increase in delay (154.0 to 164.5 seconds per vehicle). This increase in delay is associated with an increase in northbound left turn volumes because of the closure of the S. 170th Street northbound North Airport Expressway on-ramp. With Airport Link, the 32nd Avenue S./S. 176th Street intersection would operate at LOS C without or with the project.

The following intersections were shown to operate at LOS F without or with the original Link project in the year 2020:

- International Boulevard/S. 154th Street
- International Boulevard/S. 160th Street
- International Boulevard/S. 170th Street
- International Boulevard/S. 200th Street
- 28th Avenue S./S. 200th Street

With Airport Link, these same intersections were also shown to operate at LOS F without or with the project, with the exception of the 28th Avenue S./S. 200th Street intersection. With Airport Link, 28th Avenue S. would be closed to general purpose traffic, and therefore, operations are shown to improve because traffic on 28th Avenue S. would be diverted to alternate routes. The delays decreased from 123.1 to 100.2 seconds per vehicle at the International Boulevard/S. 170th Street intersection because the cycle length at this intersection was increased to a 180-second cycle length to accommodate the increase in vehicle trips through the intersection associated with both the S. 170th Street North Airport Expressway on-ramp closure and passenger drop-offs and pick-ups at Airport/SeaTac Station.

All of the other SeaTac segment intersections that were also analyzed for Airport Link had the same LOS without or with the project, with minor increases in delay. In comparison with the original project analysis for the year 2020, Airport Link would have a similar impact on intersection operations in the year 2030.

Maintenance Base

Airport Link would be served by the Central Link maintenance base currently under construction in the SODO district of Seattle south of S. Lander Street. With Airport Link, one additional storage track would be added to the maintenance base facility. The additional storage track and service that would be required for the additional train cars for Airport Link is not expected to require any additional employees, so there would be no traffic impacts.

3.1.3.3 Access and Circulation

The Airport Link alignment is within its own right-of-way with no at-grade traffic crossings; therefore, light rail operations for Airport Link would not affect local traffic access and circulation.

3.1.3.4 North Airport Expressway/Airport Circulation

To provide the corridor needed to accommodate light rail, Sound Transit and the Port of Seattle would realign the northbound North Airport Expressway and its exit to S. 170th Street. Airport Link will also modify the existing terminal area access and circulation ramps and the roadways connecting to the North Airport Expressway. This would affect the existing return-to-terminal ramps, which would be closed. The entrance and exit ramps to the parking garage would be relocated.

Other alterations to internal circulation include removing the northbound ramp from S. 170th Street to the North Airport Expressway, and relocating the south access drive to the Washington Memorial Park Cemetery, modifying the intersection of S. 170th Street and Air Cargo Road. These changes to internal circulation are reflected in the evaluation of area intersection impacts identified in Section 3.1.3.2, with the primary result being a minor redistribution of existing trips within the internal network and along S. 170th Street and International Boulevard. With the closure of the northbound on-ramp to the North Airport Expressway at S. 170th Street, vehicles would access SR 518 and I-5 to and from the north via the International Boulevard ramps and I-5 to and from the south via S. 188th Street. In conjunction with the light rail project, the modifications to the roadways would not result in a substantial increase in travel demand or traffic volumes on local arterial or regional roadways compared to No-Build.

As part of the planning and feasibility analysis for Airport Link, Sound Transit and the Port of Seattle reviewed the related roadway modifications that were needed to accommodate light rail within airport property. They determined that a five-lane configuration would be needed on the relocated North Airport Expressway to address the likelihood that the SR 518 improvements will not be made prior to the construction of Airport Link, although funding for the SR 518 improvements has recently been committed. A five-lane configuration is also consistent with longer term needs for internal circulation to serve future increases in air passenger demand. Congestion on SR 518 is forecast to reach capacity at the International Blvd and Northern Airport Expressway on-ramps by year 2010. A traffic model forecast for a four-lane configuration on the northbound expressway indicated that airport traffic operations would be affected by queues extending onto the northbound expressway from SR 518.

The congested conditions on the SR 518 ramps and mainline are expected to occur with or without the light rail and airport circulation actions that are proposed. When SR 518 on-ramps reach capacity, queues would back onto the northbound expressway. The queues from SR 518 have the potential to interfere with traffic operations on the northbound expressway and the S. 160th Street loop ramp, and could add to delays for vehicles recirculating to the main terminal. Although the Port could manage congestion and delays to the S. 106th Street loop ramp by using the existing return-to-terminal ramps by the airport parking garage, these ramps must be removed for the Airport/SeaTac Station. Therefore the five-lane configuration is included as part of the Airport Link project.

The five-lane configuration for the northbound expressway would include four northbound lanes immediately east of the airport parking garage and five lanes from the parking garage exit ramp north to the S. 160th Street loop ramp where two of the lanes would be drop-lanes and the other three lanes would continue to SR 518. The five-lane northbound expressway would be channelized to separate SR 518 traffic from the S 160th Street loop ramp traffic. The two eastern lanes would be dedicated to vehicles exiting to the S. 160th Street loop ramp and the western three lanes would be dedicated lanes for vehicles exiting to SR 518. Both the four-lane and five-lane configurations were modeled with the removal of the expressway on-ramp from S. 170th Street.

The data provided in Table 3.1-17 show the results of the analysis for the northbound expressway for the peak two-hour period of 11:00 AM to 1:00 PM for year 2010.

Table 3.1-17
North Airport Expressway Northbound Modeling Results

Measure of Effectiveness	North Airport Expressway – Northbound	
	4-Lanes	5-Lanes
Average Queue (feet) ¹	2,000 to 4,300	2,000 to 3,400
Maximum Queue (feet) ²	3,000 to 8,200	3,000 to 5,100
Average Delay to Loop Ramp (sec) ³	5 to 100	3 to 5

Measure of the typical queue that occurred over the simulation period.

Maximum queue measured over the simulation period.

Measured from end of the Return Drive (re-circulation ramp) to the S. 160th Street loop ramp.

Upper value range based on 5% increase (50 vehicles per hour) of traffic entering SR 518 eastbound from SR 99

The results show that under four-lane conditions, traffic would queue back for approximately 3,000 to 8,200 feet from the S. 160th Street loop ramp towards the airport terminal and could block the auxiliary lane exiting to the S. 160th Street loop ramp. With the forecasted peak hour volumes, vehicles are expected to queue on the northbound expressway back to the S 160th Street loop ramp, due to the capacity constraints of eastbound SR 518 in the section between the northbound expressway on-ramps and the SR 99 on-ramps. These northbound queues are anticipated to occur typically during the summer months, during the noon or airport peak hour (11:00 AM to 2:00 PM) and during the evening peak hour (4:00 PM to 5:00 PM). These queues and associated lane blockages could cause up to 100 seconds of added delay for vehicles circulating around the S. 160th Street loop ramp from the airport terminal.

With the five-lane facility, there would be five lanes from the airport parking garage to the north. The five-lane configuration would improve continuity from the terminal area and could reduce traffic queues to a maximum of approximately 5,100 feet. This would minimize the potential for expressway queues to block access to the S. 160th Street loop ramp.

3.1.3.5 Airport/SeaTac Station

At the Airport/SeaTac Station, vehicles would be able to access the passenger pick-up/drop-off area from driveways on both International Boulevard and S. 176th Street. As shown in Figure SE2-AU01 in Appendix C, the passenger pick-up/drop-off area would have one curb lane for temporary parking and one internal circulation lane, which would prevent vehicles from queuing onto the street. Additionally, the curb lane could be signed for passenger loading with no parking or stopping allowed. The passenger loading zone shown in the proposed design for the Airport/SeaTac Station could accommodate up to 8 vehicles at a time. The number of passenger pick-ups/drop-offs for the peak 15 minutes during the PM peak hour is estimated to be 18 in the year 2015 and 23 in the year 2030; this level of use was calculated for the station as an interim terminus. Levels would be the same or lower with a S. 200th Station as the terminus. Assuming that these pick-ups/drop-offs would be distributed across the 15-minute period, the 8 loading spaces would be sufficient to accommodate passenger pick-up/drop-off activity. Based on discussions with local agencies, the internal design of the pick-up/drop-off area could include some short-term parking spaces, but would have a similar footprint and access points as shown in the conceptual station plan.

3.1.3.6 S. 200th Station

At the S. 200th Station, vehicles would be able to access the passenger pick-up/drop-off area (kiss-and-ride) from one driveway/intersection on the north side of S. 200th Street (see Figure N84-AG01 in Appendix C). There are approximately 50 passenger loading spaces available to serve the S. 200th Station passenger loading zone. The number of passenger pick-ups/drop-offs for the peak 15 minutes during the PM peak hour is estimated to be 45 in both years 2015 and 2030, and the number of passenger loading spaces would be sufficient to accommodate the pick-up/drop-off demand.

At the S. 200th Station, 28th Avenue S. would be converted into a cul-de-sac approximately 250 feet south of S. 200th Street and would be open only to northbound transit vehicles to the north of S. 200th Street. A new roadway would be built (S. 198th Street) between International Boulevard and 28th Avenue S. to allow transit access to S. 200th Station and to allow general purpose traffic to access businesses. This roadway would be limited to right-in/right-out from International Boulevard. A new traffic signal would be installed at the intersection of S. 200th Street/27th Avenue S./S. 200th Station entrance. The north leg of the intersection would provide access to the passenger drop-off/pick-up area, short-term parking, and bus access. The south leg of the intersection would provide access to the park-and-ride located to the east of 27th Avenue S. Park-and-ride access may also be provided from the south on 28th Avenue S.; however, for this analysis, all park-and-ride trips were assumed to enter and exit via the new signalized intersection at S. 200th Street/27th Avenue S. Left turn pockets would be provided for eastbound and westbound traffic on S. 200th Street. The S. 200th Station and circulation layout is provided in Appendix C.

3.1.4 Station Area Impacts

3.1.4.1 Non-Motorized Facility Impacts

This section describes the impacts of Airport Link on non-motorized transportation facilities. Overall, Airport Link would not negatively affect the pedestrian and/or bicycle facilities within the project area, which are expected to maintain the same or better levels of service and connectivity as they do today. Airport Link would improve the pedestrian and bicycle facilities within station areas. Bicycle storage facilities (racks and lockers) would be included at both Airport Link stations and would be expanded as needed.

Standard 5-foot-wide sidewalks exist along the east side of International Boulevard and on both sides of S. 176th Street within 300 feet of the proposed Airport/SeaTac Station. A signalized intersection with crosswalk exists at S. 176th Street, providing access between the station and southbound bus stop on the west side of International Boulevard and would not be modified with the project. There is no sidewalk on the west side of International Boulevard between the mid-block pedestrian crossing south of S. 170th Street and S. 182nd Street/Airport Drive, except for a small section that serves as a waiting area for the southbound bus stop at the S. 176th Street intersection. This configuration would not change with the project. In addition to these existing pedestrian facilities, the Airport/SeaTac Station would include a pedestrian overpass across International Boulevard north of S. 176th Street. Access to the pedestrian bridge would be provided by elevator, escalator, and stairs on the east side of International Boulevard. Southbound bus patrons would continue to use the at-grade crossing of International Boulevard to access the pedestrian overpass on the east side of the street. Because sidewalks currently exist adjacent to the station along those roadways providing direct access to the station, no additional sidewalks would be required.

Standard 5-foot-wide sidewalks also exist along both sides of International Boulevard north of S. 200th Street and along both sides of S. 200th Street to 26th/28th Avenue S. These sidewalks would provide direct access to the S. 200th Station. Reconstruction of the east side of International Boulevard is currently underway from S. 200th Street to S. 216th Street and will include sidewalks. There are also sidewalks along both sides of 26th/28th Avenue S. There are currently no sidewalks on 28th Avenue S., and with the project, 28th Avenue S. would be incorporated into the S. 200th Station design and pedestrian facilities would be provided. As shown in Figure N84-AG01 in Appendix C, the south segment of 28th Avenue S. would be turned into a cul-de-sac and the south segment of 27th Avenue S. would provide access to the park-and-ride. Sidewalks would also be provided along 27th Avenue S. as part of the project. Because sidewalks currently exist adjacent to the station along those roadways providing direct access to the station, no additional sidewalks would be required. A pedestrian overpass would connect the station to the park-and-ride structure on the south side of S. 200th Street.

To estimate the increase in pedestrian activity on sidewalks adjacent to the Airport Link stations, the analysis calculates the number of person trips per hour (walk on/walk offs, transit access/egress, and park-and-ride person demand) based on the peak period trips shown in Table 3.1-12 in Section 3.1.2.3, Transit

Service. When these new pedestrians were added to the estimated background pedestrian trips (presented in Section 3.1.1.3, Non-Motorized Transportation), the pedestrian LOS on sidewalks adjacent to the Airport/SeaTac and S. 200th Stations would be LOS B in both years 2015 and 2030.

3.1.4.2 *Parking*

As previously shown in Tables 3.1-7 and 3.1-8 in Section 3.1.1.5, Street Network under Parking Supply and Demand, the SeaTac neighborhoods served by Airport Link currently have relatively low parking utilization rates. Airport Link and its associated stations could increase the parking demand in nearby neighborhoods, and given the low parking utilization rates in the station areas, the impact is not expected to be significant. Additionally, Airport Link patrons would be directed towards the park-and-rides located at the Tukwila International Boulevard and S. 200th Stations.

The Airport/SeaTac Station would impact some off-street private and public parking due to partial commercial property displacements for the light rail guideways and station footprint. It is estimated that approximately 80 to 100 off-street public and private (non-airport) parking spaces could be lost. Approximately 45 parking spaces at the Sea-Tac Airport parking garages would be displaced due to the pedestrian walkway from International Boulevard. Because this loss represents less than half of a percent of the total garage parking capacity, these spaces would not be replaced. For on-street public unrestricted parking spaces, some hide-and-ride activity could occur in the Airport/SeaTac Station vicinity because of the low utilization rates for these parking spaces. Airport Link patrons could choose to pay to park at the off-street public lots that are intended to serve airport patrons; however, this is not considered an impact because it is expected that those businesses are only concerned with receiving payment and not with the customer's destination. It is expected that private businesses will enforce their own parking restrictions as they do today.

Currently, employees of airport tenants may purchase monthly parking passes for \$46, which allows them to park at off-site lots located north and south of the airport. Employees using these lots are transferred to the airport in a bus shuttle. Employee bus shuttles arrive every 15 minutes and operate 24 hours a day, 7 days a week. It is assumed that this service would continue, although airport-related employee use of the park-and-rides at the Tukwila International Boulevard and S. 200th Stations could occur. Airport passenger use of the park-and-rides at the Tukwila International Boulevard and S. 200th Stations could also be a possible impact at these facilities. Use of these park-and-rides by airport passengers and employees would be discouraged, and strategies to mitigate this possible impact are discussed further in Section 3.1.9, Mitigation. The S. 200th Station would reduce existing on-street parking by approximately 40 on-street spaces due to the guideways and station footprint or land acquisition needed for the station. This parking currently occurs on unpaved shoulders on both sides of 28th Avenue S. Parking impacts with Airport Link would be primarily limited to loss of private, off-street parking stalls due to guideway piers, roadway widening, and construction of bus pull-outs. Off-street private parking loss due to partial commercial property displacements is estimated to be between 30 and 60 spaces. Off-street public parking loss due to partial commercial property displacements is estimated to be 56 spaces.

During the peak demand period at the S. 200th Station, Sound Transit forecasts a demand of 280 vehicles in 2015 and 380 vehicles in 2030 with Airport Link. This demand will be within the capacity supplied by the proposed park-and-ride at the S. 200th Station (630 stalls with Airport Link). Because the surrounding area is largely pay lots for long-term airport parking and commercial property with parking reserved for business patrons only, there is the potential for unauthorized airport users and area employees to park at the park-and-rides.

With Airport Link, the parking demand at the Tukwila International Boulevard Station would decrease as some riders would divert to the Airport/SeaTac and S. 200th Stations. The Tukwila International Boulevard Station park-and-ride would have about 614 parking spaces, and the unconstrained vehicle forecasts for the park-and-ride during the PM peak period are shown in Table 3.1-18. As shown below, the PM peak period park-and-ride demand at the Tukwila International Boulevard Station in the year 2015 would decrease from 525 to 515 vehicles with the Airport/SeaTac Station terminus and to 290 vehicles with the S. 200th Station terminus. In 2030, the PM peak hour park-and-ride demand at the Tukwila International Boulevard Station

is estimated to be 720 vehicles without the Airport Link project, which would exceed the 614 parking spaces by 106 spaces. With the Airport/SeaTac Station terminus, demand at the Tukwila International Boulevard Station would be 710 vehicles, exceeding the station parking supply by 96 spaces. With the S. 200th Station terminus, parking demand at the Tukwila International Boulevard Station would be 580 vehicles, and supply would exceed demand by 34 spaces. Hide-and-ride parking could occur at the Tukwila International Boulevard Station if Airport Link terminates at the Airport/SeaTac Station. However, a parking monitoring program, which is a component of the Initial Segment, will be in place to monitor actual parking use and hide-and-ride activity at the Tukwila International Boulevard Station Park-and-Ride.

Table 3.1-18
PM Peak Period Park-and-Ride Unconstrained Demand at the
Tukwila International Boulevard Station Without and With Airport Link

	Tukwila International Boulevard Station PM Peak Period Park-and-Ride Demand (vehicles)	
	Year 2015	Year 2030
No-Build	525	720
Airport/SeaTac Station Terminus	515	710
S. 200th Station Terminus	290	580

3.1.5 Traffic Safety

Because Airport Link is elevated for much of its route and when at-grade operates in exclusive right-of-way with no at-grade crossings, there would be no impacts to traffic safety.

3.1.6 Truck Circulation Impacts

Because Airport Link is elevated for much of its route and when at-grade operates in exclusive roadway right-of-way with no at-grade crossings, there would be no impacts to truck circulation.

3.1.7 Impacts to Railroad Mainlines and Spur Tracks

No adverse impacts to freight railroad activity or facilities are anticipated for Airport Link because no rail lines are in the project area.

3.1.8 Impacts to Navigable Waterways

No adverse impacts to navigable waterways are anticipated for Airport Link because no navigable waterways are in the project area.

3.1.9 Mitigation

3.1.9.1 Traffic Operations

The following guidelines were used to determine when mitigation should be identified:

- When project conditions degrade intersection LOS from LOS E or better to LOS F.
- When project conditions caused the average intersection delay to increase by 20 percent or more at an intersection at LOS E or worse.
- When project conditions caused the 95th-percentile queue length to exceed lane storage capacity.

Under these guidelines, mitigation is only needed at the International Boulevard/S. 200th Street intersection when Airport Link is extended to S. 200th Street. The other LOS F intersections do not require mitigation because they experience less than a 20 percent increase in delay, and queue lengths did not worsen with the project. At the International Boulevard/S. 200th Street intersection, the increase in delay would be approximately 50 percent for both year 2015 and 2030 project conditions with the project trips that result with the S. 200th Station. Sound Transit will work with the City of SeaTac to determine appropriate improvements as mitigation, but the addition of a second southbound left-turn lane by the year 2015 would reduce the average delay per vehicle from 122.1 to 86.0 seconds per vehicle, which would be only a 4 percent increase in delay over No-Build conditions. The addition of a second westbound left-turn lane by the year 2030 would reduce the average delay per vehicle from 149.1 to 95.4 seconds per vehicle, which would improve operations to better than year 2030 No-Build conditions. Until a second westbound left-turn lane could be added, a measure such as extending the left-turn pocket storage by approximately 500 feet would accommodate the 95th-percentile queue lengths.

While the LOS degrades at the International Boulevard/S. 188th Street intersection with the project, it degrades from LOS D to E and remains at an acceptable LOS. The intersection delay increases only marginally by 2.1 seconds per vehicle, which is well below a 20 percent increase in average vehicle delay.

3.1.9.2 *Non-motorized Facilities*

There are no adverse impacts to non-motorized facilities with Airport Link; therefore, no mitigation is required.

3.1.9.3 *Parking*

Given the low utilization rates for on-street unrestricted parking spaces, some hide-and-ride activity could occur within the Airport/SeaTac Station vicinity. This activity could be mitigated through the implementation of time restrictions or permits for on-street parking that is currently unrestricted. Sound Transit will work with the City of SeaTac to determine when such measures would be needed. Off-street parking displacements due to partial property acquisitions would be subject to compensation or replacement within the guidelines described in Section 4.3, Acquisitions and Displacements.

Mitigation measures to minimize airport passenger and employee use of the Tukwila International Boulevard and S. 200th stations and park-and-rides would include strict enforcement of a no overnight parking policy, signage indicating that parking is for the exclusive use of light rail system patrons only, and closing the park-and-ride during late evening/early morning hours when there is no light rail service.

3.1.9.4 *Access and Circulation*

No mitigation for access and circulation impacts is required beyond the mitigation listed under the Traffic Operations section above.

3.1.9.5 *Transit*

There are no adverse impacts to transit with Airport Link; therefore, no mitigation is required.

3.2 LAND USE AND ECONOMICS

3.2.1 *Affected Environment*

The City of SeaTac is a regional employment center with a residential population of 25,500. The city boundaries surround Sea-Tac Airport and the Washington Memorial Park Cemetery, which occupy the areas west of International Boulevard, the main commercial corridor of downtown SeaTac. Most of the other land uses along this corridor are related to the airport and serve city residents and visitors. These include uses that serve air travelers (such as hotels and motels, commercial parking lots, rental car lots, fast-food restaurants

and diners, gas stations, and convenience marts), conventions and business groups, and the airline industry (airline offices, facilities related to delivery/freight services).

As the airport and airport-related businesses have grown, single-family neighborhoods have been displaced. Presently, single-family neighborhoods are located east and south of the airport and commercial district. Two small groups of single-family houses are located in a commercial zone between S. 192nd Street and S. 200th Street, along 28th Avenue S. Multi-family housing is generally located between the commercial district and single-family residential areas to the east. The largest concentrations of multi-family housing and zoning are located east of International Boulevard south of S. 200th Street. There are also several mobile home parks located east of Airport Link.

The alignment of Airport Link is largely along existing transportation corridors within SeaTac and within Sea-Tac Airport property. These include SR 518 at the north end of the project area, 28th Avenue S. in the south, and in the median of the North Airport Expressway. Existing land uses in the areas around Airport Link are shown in Figure 3.2-1.

The Airport Link begins at the terminus of the Initial Segment at the Tukwila International Boulevard Station. The station area contains a mix of land uses, including those that cater to travelers (commercial parking lots, fast-food restaurants), and a mixed-use community business district that includes office space, small neighborhood shopping centers, light industrial uses, a post office, and state patrol and fire stations. Multi-family housing surrounds the commercial area, with single-family housing beyond that. The southern portion of the area is devoted to road right-of-way.

Airport/SeaTac Station Area

The proposed Airport/SeaTac Station would be on portions of Sea-Tac Airport property near the airport parking structure, access ramps, the main terminal, and adjacent to the City Center, the center of the City's commercial district. The Airport/SeaTac Station area also includes the commercial area east of International Boulevard, which contains several of SeaTac's largest hotels and office buildings, together with commercial parking lots. Sea-Tac Airport is the primary air transportation hub of Washington State and the northwestern United States. It is the only airport within the Seattle/Tacoma metropolitan area that offers scheduled commercial airline service, and it is a key connection point for air passengers and cargo traveling to and from communities in eastern Washington State. The airport's primary service market is the Central Puget Sound region, and it is one of the nation's busiest airports, currently serving nearly 29 million passengers annually and 350,000 metric tons of air cargo, with over 350,000 flights per year (Port of Seattle 2003). Port of Seattle staff estimates that the airport could serve as many as 45 million passengers by 2021 (Port of Seattle 2005a). Sea-Tac Airport is also the core of a major employment center in the region, with approximately 19,000 employees on-site and an estimated 33,000 airport-related jobs off-site (Port of Seattle 2005b).

S. 200th Station Area

This station area includes a variety of commercial uses located along International Boulevard and 28th Avenue S. Current commercial uses near S. 200th Street cater to airport uses, including a large park-and-fly lot, hotels, as well as retail and restaurant uses. Much of the area surrounding the commercial corridor is residential. The southeast area contains a single-family neighborhood; mobile home parks are located in the southwest and northeast portions of the station area. Institutional land uses in the area include a fire station, an elementary school, the Federal Detention Center, and a power substation.

3.2.2 Impacts

3.2.2.1 No-Build

With No-Build, the proposed Airport Link station areas would remain in commercial or airport uses and the local economy would be unaffected. The Tukwila International Boulevard Station in Tukwila is being built as part of the Initial Segment, and the effects of the station's development were previously evaluated in the Tukwila Freeway Route Final Supplemental EIS and the Initial Segment EA.

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Route Not To Scale

- Initial Segment
Airport Link

-  S. 160th Street Loop Ramp Project
-  Related Roadway Improvements

Figure 3.2-1 Existing Land Use

Two separate Port of Seattle projects are included in the No-Build land use conditions. The Port of Seattle would develop the S. 160th Street Loop Ramp project, which would provide a terminal return route from the North Airport Expressway and improve the Airport's internal circulation. The relocation and demolition of existing facilities for the ramp project include at least partial demolition of the HMS Host facility (a warehouse) and the relocation of a number of maintenance facilities and equipment.

The Port of Seattle would also construct a five-story Rental Car Facility (RCF) at S. 160th Street and airport access road realignments. The RCF may occupy an area that currently is used by five businesses, including three restaurants, a car dealership, and a park-and-fly lot (Port of Seattle 2004b).

3.2.2.2 *Airport Link*

Land Use Plan Impacts

SeaTac's Comprehensive Plan focuses higher-density land uses in areas to be served by mass transit and encourages high-density, transit-oriented development in station areas within its designated Urban Center along International Boulevard. Light rail service is a significant component of the City's goals, policies, and strategies for the City Center Plan. The Airport Link station is within the City's high capacity transit (HCT) district, and would serve the SeaTac Urban Center. SeaTac's Comprehensive Plan states a preference for transit-oriented development to occur at light rail stations. The City of SeaTac anticipates a station area planning effort in 2005 to identify potential HCT district revisions for the Airport Link station area. Other City of SeaTac plans and policies applicable to this project include the Transit Supportive Land Use Master Plan, the SeaTac Municipal Code (including sections that address Zoning, Subdivision, and Environmental Protection), SeaTac City Center Standards, and the Design Standards for High Capacity Transit Facilities. These plans and policies are implemented by related policy documents that include the King County Surface Water Design Manual, the Des Moines Creek Basin Plan, and associated regulations regarding right-of-way permits, clearing and grading permits, and the subdivision code.

As for the original project, the Airport Link stations would incorporate improvements that would enhance pedestrian access, such as improved crosswalks and a pedestrian overpass crossing International Boulevard. This would contribute to consistency between the design of the light rail station and comprehensive plan policies.

Light rail stations are classified by the City of SeaTac Zoning Code and the Growth Management Act as essential public facilities (EPFs). The City has adopted text within their land use code in part to address the development of the light rail system. All EPF proposals are to be reviewed through the City's established CUP-EPF (Conditional Use Permit) procedure and design review process. This mechanism provides a structure for the City to collaborate with Sound Transit to identify reasonable conditions and mitigations for permitting the route and stations. Additionally, the project would have to comply with the terms of the Growth Management Act regarding development of EPFs.

In addition to land use plans, the light rail system would be consistent with regional transportation, regional growth management, and aviation considerations that are the major elements of the Sea-Tac Airport Master Plan as well as King County Comprehensive Plan and Vision 2020.

The Sea-Tac Airport Master Plan Update recommends several airport improvements through the year 2020, including a new runway, expansion of passenger service areas, and relocation of roads and utilities. The conceptual plan shows a regional rail station either north of S. 170th Street or at International Boulevard with a connection to the main terminal. The plan also states that all terminal improvements would allow integration with or connections to potential regional or local rail systems. Airport Link would remain consistent with this characterization.

As listed in the Anticipated Permits and Approvals table (located in the preface materials), the Airport Link project would need to obtain Conditional Use Permits from the City of SeaTac, go through Design Review, and obtain Planning, Design, and Arts Commission Approval for the project. During the design

phase, Sound Transit will coordinate with the City of SeaTac to maximize opportunities to support the City's Comprehensive Plan Policies and Strategies.

Light rail is an essential public facility (EPF), pursuant to Central Puget Sound Growth Management Hearing Board's previous interpretation of the Growth Management Act. Sound Transit is coordinating with the City of SeaTac, as well as other agencies, in the decision-making process. Once Sound Transit's routing decision is final, the City has a "duty to accommodate" the light rail project in its land use plans. Sound Transit's analysis of Airport Link has found that the project would not conflict with and would provide supporting opportunities for the following goals and policies in the City's Comprehensive Plan:

- 3.3D &E (Bicycle Routes)
- 3.3C (High Capacity Transit and/or Public Rapid Transit System Integration)
- 6.2I (Connection to Neighborhoods)
- 6.2A (Creating New Focal Points and Nodes)
- 6.2N (Other Parking Provisions)
- 3.3A (Pedestrian Movement)
- 6.2D (Station Areas)
- 6.2F (Linkages between the Urban Center and the Airport)

During final design Sound Transit will work with the City of SeaTac to address and support other applicable Comprehensive Plan goals and policies related to project design, and to incorporate reasonable measures to avoid or minimize environmental impacts. Goals and policies that may be relevant to project design include:

- 6.2A (Creating New Focal Points and Nodes)
- 6.2B (Landscaping)
- 6.2E (Treatment of Support Structures)
- 6.2G (Curbs, Sidewalks and Furnishing)
- 6.2H (Pockets of Public Space)
- 6.2L (Surface Parking: Screening and Vegetation)

Land Use and Economic Impacts

The proposed Airport Link project between Tukwila International Boulevard Station and S. 200th Station would displace 10 businesses with an estimated 112 employees. Additional information on property impacts is also identified in Section 3.3, and a list of properties that may be either partially or fully acquired for this project is presented in Appendix D. At this stage of the planning process, property acquisitions are estimates; acquisitions would be finalized during the engineering design phase and after Sound Transit enters into negotiations with individual property owners.

Affected businesses would include the West Coast Gateway Hotel, vacant Airport Plaza Hotel, AM-PM Mini Market (2806 S. 188th Street), and SeaTac Mini Mart (18613 Pacific Highway S.). The lease for the Radisson Hotel on Port property would not be renewed, which could result in a loss of employment for the hotel's employees if the hotel does not relocate. The hotel use at this location would be replaced by light rail and the relocated expressway. A six-parcel area used as surface parking lots, located south of S. 200th Street and between 26th Avenue S. and 28th Avenue S., could also be acquired for the Airport Link project for a park-and-ride. The proposed project would require relocation of the Washington State Liquor Store that is co-located with the SeaTac Mini Mart. The vacant Airport Plaza Hotel would be acquired for the Airport

Link project, but this would not displace an active business or ongoing source of employment. The City of SeaTac and the owners of the Airport Plaza entered into a development agreement for this property in December 2004. Sound Transit will work with the City to utilize the needed portion of this property in a manner consistent with the City's redevelopment plans and to facilitate redevelopment of the remainder of the site. Portions of the Dollar Rental Car and Park Fly properties, located north of the corner of S. 176th Street and International Boulevard, would be acquired for the kiss and ride, but the properties are expected to remain viable for the current businesses. To the maximum extent practicable, Sound Transit would support transit-oriented development and work with the City of SeaTac to encourage transit-oriented development in the areas around the two Airport Link stations.

As cited in the 1999 Central Link Final EIS, annual employment growth in the SeaTac segment area is estimated at 815 jobs; therefore, the employment impact from business displacements from this project can be described as low. Furthermore, because Sound Transit would provide relocation assistance to eligible displaced businesses, it is likely that the displaced jobs would be relocated, not lost. However, businesses would relocate to areas where comparable space is available and they can best conduct their business; this may or may not be near to their existing locations. Changes in employment resulting from the business displacements associated with this project are expected to be relatively small. Using this change in employment as an indicator of the magnitude of the economic effect resulting from the business displacements leads to the conclusion that this economic effect is small.

Revisions to S. 170th Street would also modify access to Memorial Park and to an airport parking lot. The changes in access are minor. Airport Link would result in minor changes to existing land use patterns, a result of the limited displacements and low indirect impacts that could affect land use or economic activity. The project would, however, increase the redevelopment potential of the area around the Airport/SeaTac Station. It would not preclude major planned improvements nor alter the future patterns of land use in the area. Airport/SeaTac Station would be located near S. 176th Street west of International Boulevard. This station would provide an opportunity to establish pedestrian connections to other uses in the SeaTac City Center. This would be similar to the improved connections that were anticipated for the provisional station at S. 184th Street, as part of the original project.

The S. 200th Station would feature a 630-stall park-and-ride parking structure near S. 200th Street. As with the original project, Airport Link is likely to support redevelopment, although a park-and-ride parking structure may temper this effect by reducing the desirability of adjacent lots for some types of residential and small-scale commercial uses. The development of the S. 200th Station would modify access to several properties that have driveways to 28th Avenue S., which would be constructed to transit use only. All of these parcels would still be accessible from International Boulevard. SeaTac's long-term plans of transitioning this area into a business district would be compatible with the presence of park-and-ride facilities.

The Airport Link project is similar to the original project in that the stations would be west of International Boulevard and thus have minimal land use and economic impacts. Acquiring property for the Airport Link may preclude or limit future development on these sites and would change the use of these properties. Business displacement impacts would, however, be greater than the original project because of the full acquisition of the six parcels developed for airport parking. Business displacement impacts described in the original project were also low because the Washington State Liquor Store and SeaTac Mini Mart, Airport Plaza, and West Coast Gateway Hotel were not included in the estimates of displacements, although they remain within the range of property displacements for other alternatives considered. A review of the original project as part of the current EA effort found that these businesses would have been displaced by the original alignment. If these businesses were counted as displaced, the business and employment impacts of the original alternative and the current alternative would be very similar. Given the volume of businesses and employment in this area, as well as considering economic effects on a regional scale, the overall effect in economic conditions, including employment, would be minor.

Properties located to the north of the Sea-Tac Airport to be used by the revised part of Airport Link are Port-owned, and their use for Airport Link would have no impact on property tax revenues. Because Sound Transit is a public agency that does not pay property taxes, acquiring private property for the Airport Link project would remove these properties from the tax rolls and reduce property tax revenues for the City of SeaTac. Additionally, if businesses relocate to areas outside the city of SeaTac, the city would experience a decline in commercial activity and employment. Because of the small number of businesses to be acquired and the limited number of employees potentially affected, the impact of these acquisitions on the City of SeaTac tax revenues, commercial activity, and employment is expected to be low. Like the land use and economic impacts previously determined in the 1999 Central Link Final EIS, these impacts are not expected to be significant.

Based on actual tax revenues for 2004, the total estimated loss of tax revenue from acquiring property for the proposed project would be \$202,748. In 2004, property taxes within the City of SeaTac assessed at a rate of \$2.82 for each \$1000 of assessed value (City of SeaTac 2004). Based on 2004 assessed values, property acquisition for the Airport Link project would reduce property tax revenues within the City of SeaTac by an estimated \$52,156. However, these tax impacts, including the property tax reduction, are expected to be less because the Airport Plaza Hotel is expected to be redeveloped and not removed entirely from the tax rolls. The Airport Plaza Hotel generated tax revenues of \$63,163 in 2004, including an estimated \$14,031 of property tax revenues that went to the City of SeaTac. Property taxes in the City of SeaTac generated revenue estimated at \$9,201,826 in 2004 (City of SeaTac 2004), and developing the proposed Airport Link project would reduce property tax revenues for the City of SeaTac by approximately 0.5 percent. Property tax revenues for the City of SeaTac are not expected to be significantly affected by the proposed project; overall, fiscal impacts to the City and others are anticipated to be minor.

Like the original project, Airport Link could have some positive effects on development as envisioned in SeaTac's Comprehensive Plan, particularly with improved pedestrian connections across International Boulevard, linking the City Center area to the Airport/SeaTac Station. The Airport/SeaTac Station would provide a more unified connection between airport-related travel and the uses adjacent to the City Center. The improved access to public transit and the availability of large tracts of underdeveloped land, such as surface parking lots, can be expected to result in moderate redevelopment of the areas surrounding the Link stations in the city of SeaTac.

Under the original project, 5 businesses and 55 employees were expected to be displaced by the Airport Link. However, as stated above, this estimate does not include several businesses that would more accurately be described as displacements. If the same property acquisition and displacement criteria were applied to the original project as are being applied to the current proposal, the number of displaced businesses and employees would increase to 8 and 97 respectively.

3.2.3 Mitigation

Mitigation for land use and economic impacts would be provided through relocation assistance as described in Section 3.3.3.

3.3 ACQUISITIONS, DISPLACEMENTS, AND RELOCATIONS

3.3.1 Affected Environment

Building and operating the Airport Link light rail system requires acquisition of property for right-of-way and other facilities and presumes displacing and relocating some of the existing uses. This section summarizes the likely property acquisitions, based on the current conceptual designs, and compares these impacts with the original proposal. Appendix D contains a table listing the properties affected by right-of-way needs estimated for the project. This list is preliminary and is not intended to represent a final determination of project needs for the project.

There are two types of property acquisitions:

- A “partial acquisition” would acquire part of a parcel but would not dislocate the existing use.
- A “full acquisition” would acquire the full parcel and displace the current use. Full acquisitions include parcels that may not be fully acquired for the project but would be affected (due to loss of parking, access, or other features) such that the existing use would be substantially impaired.

Property to be acquired, either partially or fully, may be needed for construction and operation of the facility, and in this case would be retained by Sound Transit. Other properties may be needed only during construction (for staging or storage, for example) and may be sold by Sound Transit after completion of construction. These properties would be available for redevelopment, as allowed by City of SeaTac land use regulations and FAA regulations.

Partial acquisitions also include easements, either temporary or permanent, in cases where Sound Transit needs access to a property to construct, maintain, or repair the light rail system. For example, Sound Transit will acquire easements for both land and air space within the airport to support light rail construction.

3.3.2 Impacts

The Airport Link project would require full acquisition of 16 properties, including 10 commercial properties. It would also affect a public/institutional property, 3 single-family residences, and 2 multi-family residences. It should be noted that displacement and relocation impacts would be less than these numbers indicated because a number of the properties are either undeveloped or the buildings are currently vacant. Of the properties to be acquired for Airport Link, 1 commercial property is a vacant hotel, 1 parcel zoned for single-family residential is undeveloped, 2 parcels zoned multi-family residential are undeveloped, and 6 of the commercial properties are surface parking lots. Twenty-one parcels, including 14 commercial properties, 6 public/institutional properties, and 1 multi-family residence, would be partially acquired for Airport Link. The 5 public/institutional properties include properties owned by the Washington State Department of Transportation (SR 518) and the Port of Seattle, which would retain ownership of the properties with land and air space easements for Airport Link construction and operation. The Port of Seattle properties affected include a former bank building on International Boulevard. Employees at this location will be relocated in the Port of Seattle Learning Center. A complete list of properties that may be either partially or fully acquired for this project is presented in Appendix D.

The Radisson Hotel is located on land leased from the Port of Seattle. Construction of the Airport Link would require the lease for the Radisson Hotel to be shortened, and the business would not be relocated by the project. The Airport Plaza Hotel is also included in the list of commercial properties to be acquired, although it is currently a vacant building.

Port of Seattle property south of the Radisson Hotel would also be used by the realigned northbound North Airport Expressway and the light rail alignment. This area currently houses an office building with airport-related offices and parking. These operations would need to be relocated as a result of this project. The Port has identified options, including areas within the airport as well as on off-site properties. In some cases, parking or other site improvements might be required to provide suitable replacements.

The realignment of S. 170th Street and the revised access to Doug Fox Parking and to Washington Memorial Park Cemetery could require demolition of an existing building on the Doug Fox lot. The building operations would be relocated within the lot, configured to the revised access driveway. Some loss of parking capacity could also occur.

As a protective purchase authorized by FTA, Sound Transit has acquired King County Water District No. 75's property at 19863 28th Avenue S. to construct the S. 200th Station and park-and-ride, and other Airport Link facilities. The Water District's property at this location is currently vacant.

For the Airport Link, most commercial displacements would be motel/hotel, service, surface parking lots, and retail space. Acquisitions would be dispersed at various locations along the route.

Under the original project, a total of 14 properties were to be fully acquired, including 12 commercial properties and 2 single-family residences. Aside from areas owned by the Port of Seattle, no public property was to be fully acquired under the original project. A total of 47 parcels were to be affected by partial acquisitions for the original project. Table 3.3-1 reports effects of Airport Link and the original project.

**Table 3.3-1
Summary of Airport Link Acquisitions by Alternative**

Alternative	Commercial/Private Institutional		Public/ Institutional		Residential Single-Family		Residential Multi-Family		Table Totals	
	Partial	Full	Partial	Full	Partial	Full	Partial	Full	Partial	Full
Airport Link to Airport/SeaTac Station	3	0	5	0	0	0	1	0	9	0
Airport Link to S. 200th Station	14	10	6	1	0	3	1	2 (0 units)	21	16
Original Project	42	12	0	0	5	2	0	0	47	14

3.3.3 Mitigation

Sound Transit would compensate affected property owners according to the provisions specified in Sound Transit's adopted Real Estate Property Acquisition and Relocation Policy, Procedures, and Guidelines. Sound Transit would comply with appropriate provisions of the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and Uniform Relocation Act Amendments of 1987 and the State of Washington's relocation and property acquisition regulations (Washington Administrative Code [WAC] 468-100).

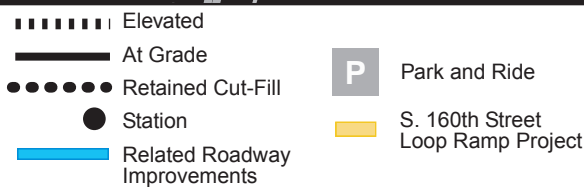
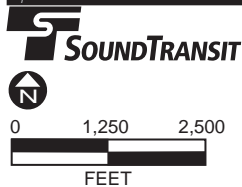
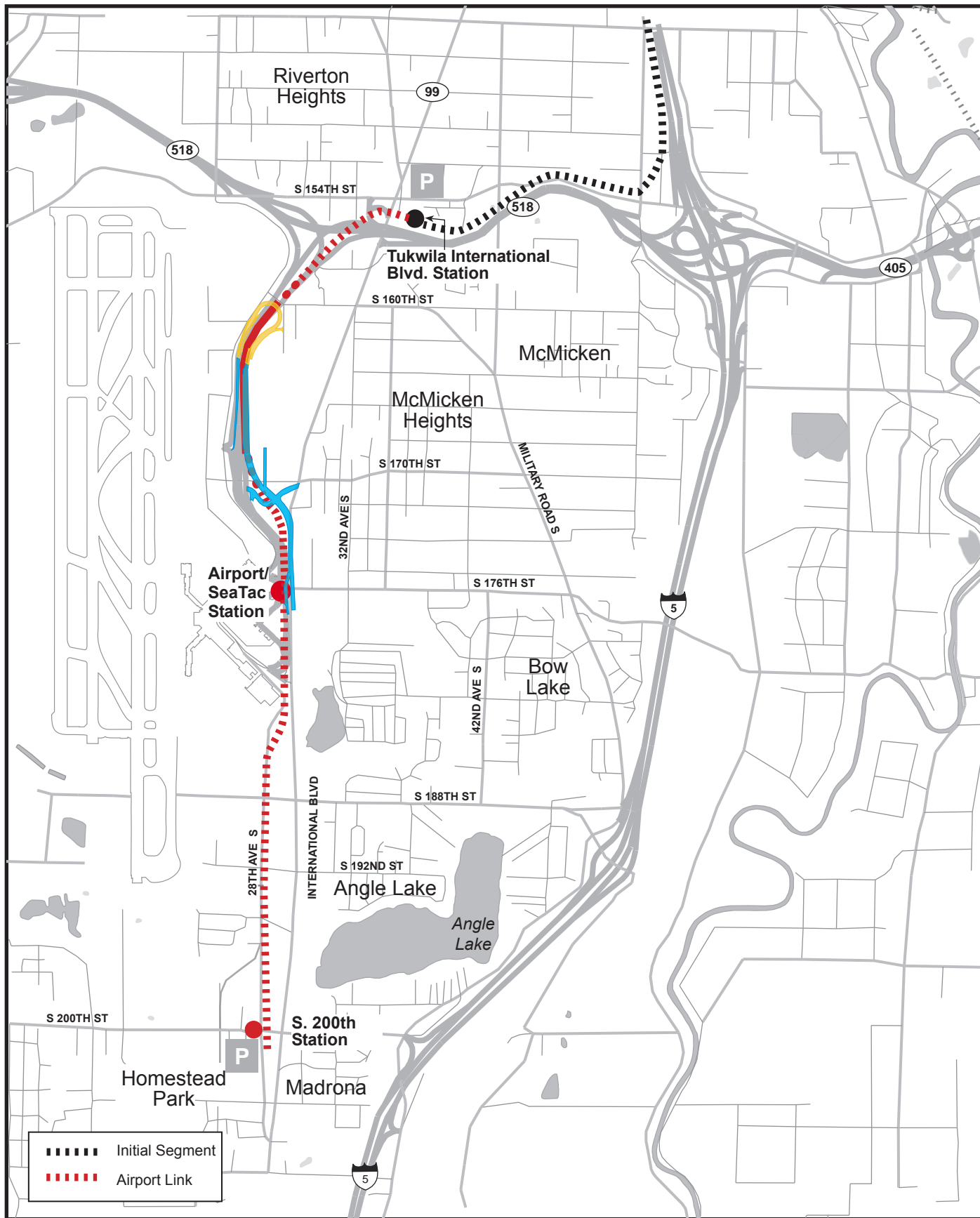
Airport Link requires the demolition of the former bank building on International Boulevard, which is used by the Port of Seattle. Those employees will be relocated in the Port of Seattle Learning Center (19639 28th Avenue, SeaTac, Washington, 98188). Additional paved parking area is required to accommodate these employees. Project components include demolition of approximately 9,360 square feet of non-pollution-generating surface area (existing modular structures) and utilities on the site as needed; regrading of site to provide a level pad for a parking lot; approximately 19,375 square feet of paving for new parking area for a maximum of 60 parking stalls; and interior building remodeling. The transportation effects related to this relocation are minor and within the forecast future traffic volume levels assumed for the project. The minor increases in impervious surfaces at this location would also be addressed according to the requirements identified in section 3.9, Water Resources, and impacts are not anticipated.

3.4 NEIGHBORHOODS AND POPULATIONS

3.4.1 Affected Environment

SeaTac's Comprehensive Plan identifies several distinct neighborhoods situated north, south, and east of Sea-Tac Airport; most were developed since the 1940s and are densely populated. The neighborhoods are largely defined by geographic features (such as the bluff at the eastern edge of the city) and by major arterial streets (Figure 3.4-1). The characteristics of these neighborhoods were discussed in detail in the 1999 Central Link Final EIS. Riverton Heights is a residential neighborhood developed in the 1940s with a commercial area located along International Boulevard. McMicken Heights, a residential neighborhood to

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**Figure 3.4-1
Neighborhoods
Near Airport Link**

the east of International Boulevard and developed mainly since the 1960s, includes McMicken Heights Elementary School and McMicken Heights Park. The Bow Lake neighborhood, to the east of International Boulevard, is largely residential but has a higher proportion of multi-family development than McMicken Heights, including a 400-home mobile home park. Angle Lake, a largely single-family residential area developed since the 1960s, is mainly along the Angle Lake waterfront to the east of International Boulevard, with commercial development along International Boulevard. Angle Lake Park is the only major community facility. Madrona is a residential neighborhood with single-family development located north of S. 204th Street and multi-family housing and mobile home parks south of S. 204th Street.

Because of the proximity of the Sea-Tac Airport to the city of SeaTac, parking is a major land use consideration within the city, and parking is a concern for many of the surrounding neighborhoods. The current supply and demand for unrestricted on-street parking, as shown in Tables 3.1-7 and 3.1-8, indicate a utilization rate for unrestricted on-street parking of no greater than 20 percent in the proximity of the two proposed stations.

The population and some of the demographic characteristics of the neighborhoods adjacent to the Airport Link corridor have changed since 1990, when the census data used in the 1999 Central Link Final EIS were collected. Additional information is provided in Appendix F, which updates the environmental justice analysis for Airport Link. A review of the 2000 data for census tracts that include the adjacent neighborhoods (U.S. Census Bureau 2000) found the following:

- The proportion of persons stating nonwhite race ranges from 32 to 45 percent as compared with 12 to 19 percent in 1990, with an additional 4 to 8 percent stating two or more races in 2000.
- The proportion of elderly persons in the population (up to 14 percent of the total) remained similar from 1990 to 2000.
- Median income for households along the Airport Link corridor ranged from \$33,869 (in 1999 dollars) to \$39,875. Median income increased approximately 14 percent between 1990 and 1999.
- The number of households below the poverty level ranged from 12 to 15 percent in 2000, as compared to 7 to 11 percent in 1990.

3.4.2 Impacts

3.4.2.1 No-Build

Several projects would occur in the project area regardless of whether the Airport Link project is constructed. The Initial Segment of Central Link would be constructed to the Tukwila International Boulevard Station with a shuttle service running from S. 154th Street to the airport terminal. With the S. 160th Street Loop Ramp project, the Port of Seattle would revise the circulation system on the North Airport Expressway to include a new return-to-terminal recirculation road at S. 160th Street and revisions to nearby property access drives. The Port of Seattle would also construct a 21-acre Rental Car Facility (RCF) at S. 160th Street, including airport access road realignments. These projects are largely within or immediately adjacent to the airport and reflect the trend toward conversion of commercial areas to airport-related uses. Additional projects that are reasonably foreseeable but not approved or funded in the area are discussed in Section 3.19, Cumulative Effects.

With No-Build, no adverse impacts to neighborhood quality, safety, or security are anticipated. However, the improved transit accessibility benefits of Airport Link would also not occur.

3.4.2.2 Airport Link

The analysis of neighborhood impacts due to Airport Link employs the approach from the 1999 Central Link Final EIS, which followed federal guidance for transportation projects (*Community Impacts Assessment, A Quick Reference for Transportation*, FHWA 1998). The analysis of potential impacts evaluated changes in neighborhood quality, taking into consideration the effects of residential and business

displacements and changes in traffic, parking, noise, vibration, visual character, and accessibility. The potential for changes to social interaction were also reviewed, based on physical or functional adverse changes to accessibility.

As with the original project, neighborhood quality impacts for Airport Link would be low or low/moderate on all neighborhoods. The Airport Link project would be primarily located on airport property and along arterial roadways. Displacements of residences and business displacements would be low. Traffic and parking impacts from the Airport Link project would be low, although the Airport/SeaTac Station would provide an opportunity for drivers to “hide and ride.” Under current conditions, drivers have a strong motivation to avoid parking at commercial lots in the area that charge an average of \$13.63 per day, yet the utilization rate for unrestricted, on-street parking in the vicinity of the two proposed stations is 20 percent near the Airport/SeaTac Station and 14 percent near the S. 200th Station. Based on these conditions and the fact that the project would reduce automobile traffic in the area (Table 3.1-15), the Airport/SeaTac and S. 200th Stations have a low potential for hide-and-ride parking impacts to nearby areas. Hide-and-ride activity can be addressed through measures previously identified for the original project (see Section 3.1, Transportation for additional information). As discussed in detail in Section 3.7, noise from light rail could impact up to five residences near the S. 200th Station and park-and-ride, but the effects can be mitigated.

Of the SeaTac neighborhoods, McMicken Heights and Bow Lake would likely experience the most improved transit accessibility, because the Airport/SeaTac Station and its pedestrian crossing over International Boulevard would be closest to these areas. The Airport Link project would not create any new barriers to social interaction, because the project would be located west of (on the airport side of) International Boulevard and Washington Memorial Park Cemetery and would follow other existing rights-of-way that do not cross through neighborhoods.

Similar to the findings for the original project, the Airport Link project is not expected to adversely impact safety or security in the nearby neighborhoods. Crime at stations is usually a reflection of crime levels in the surrounding neighborhood. However, park-and-rides can be an attraction for crime.

3.4.3 Mitigation

Mitigation to control noise, aesthetics, and other potential impacts as discussed in other sections of this EA would also reduce impacts on neighborhood quality. Any potential adverse impact to the neighborhoods from hide-and-ride parking would be minimized by the mitigation measures described above in the Transportation section (Section 3.1) and would not result in any change to neighborhood character or quality.

3.5 VISUAL RESOURCES AND AESTHETICS

3.5.1 Affected Environment

In the areas surrounding Airport Link, the terrain consists of a gently rolling plateau west of the Duwamish Valley, with small lakes contained in shallow basins on the plateau. Urban development ranges from the airport and industrial development and associated surface transportation around Sea-Tac Airport, to new mid-rise office complexes, extensive hotel and motel complexes, and a mixture of low-rise multi-family, mobile home, and single-family neighborhoods. Visually prominent open spaces, all located along International Boulevard, include Washington Memorial Park (a cemetery), Bow Lake, Angle Lake, and Angle Lake Park.

The southbound expressway borders the west edge of the Airport Link corridor, and SR 518 borders the north edge of the corridor. Both of these are limited-access roadways with broad expanses of pavement and heavy traffic volumes, as well as bridges, retaining walls, and other structures. Overhead facilities include airport and freeway light standards and sign structures and electrical transmission lines and distribution lines. Located on the airport’s property are other prominent structures that range from hangars, terminals buildings, warehouses, and the airport control tower. Existing tree cover includes the mature tree plantings along the

airport access road, the recently planted median and street trees along International Boulevard, the wooded cemetery, and the highly diverse residential plantings in the neighborhoods around Bow and Angle Lakes.

The visual scale of existing urban development ranges from very large in the airport area, to large in the commercial areas along International Boulevard, and small in residential neighborhoods. Visual resource textures range from the very coarse grain of the airport area to the moderately fine grain of the residential neighborhoods.

Scenic views toward the Cascades and Mount Rainier are available from the west and north slopes around Angle Lake. Other scenic views are closer in range, directed toward Angle Lake and Bow Lake. Angle Lake Elementary School, which closed as a public school in 1975, is both a historic and visual resource. Viewer sensitivity is greatest in residential neighborhoods, which include McMicken Heights, Bow Lake, and Angle Lake, and in parks located within these areas.

Future developments in the area include the airport's ongoing expansion and development, highway and surface street projects, office complexes, parking structures, and mid-rise hotels along International Boulevard.

3.5.2 Impacts

3.5.2.1 No-Build

In the No-Build alternative, visual resources would continue to be affected by existing development in the project corridor, including moderate to large-scale buildings; above-ground utilities; asphalt parking lots; the freeways, highways and surface roads that lead to and from the airport and SeaTac; and Link light rail's Initial Segment to the Tukwila International Boulevard Station. Much of the area in and adjacent to the project corridor is designated for higher-density development than currently exists, and it is expected that this development would continue to increase the urban appearance of the area. In the highly developed commercial/office area along International Boulevard, this trend toward higher-density development would cause an incremental increase of scale, bulk, height, and urban character. However, neighborhoods in less developed areas, such as along 28th Avenue S. and (to a lesser extent) along International Boulevard in the north end of the Airport Link corridor, would likely experience a pronounced change in overall visual character, as small to medium-scale buildings, generally coarse texture, parking lots, and undeveloped open spaces are replaced with medium to large-scale commercial and office structures, hotels, and parking structures.

3.5.2.2 Airport Link

Along the Airport Link corridor, no scenic views are blocked and adverse visual impacts would largely be avoided, although the Airport Link project would involve some visible changes to the area. Viewers—the people who live and work in the area, people traveling to and from the airport, and motorists traveling through the area—currently experience a broad range of developments that varies in density and scale. A large portion of the landscape is devoted to roads, airport uses, and related developments. Residential developments, which house viewers who are generally considered to be sensitive, are further to the east, away from the project corridor. The proposed Airport Link alignment would be located largely within the airport property or along existing street and freeway rights-of-way and would avoid removing notable visual resources. North of the airport, a portion of the light rail alignment that was elevated in the original project would be at-grade with Airport Link, which would make that section less visible. This change in the light rail alignment is a result of the realignment of the North Airport Expressway. In other areas, such as the elevated sections above SR 518 and International Boulevard and along 28th Avenue S., the elevated structure would remain the same or slightly lower in elevation than in the original project.

The Airport Link project would also revise roadways, landscaping, and transportation structures for the North Airport Expressway, S. 170th Street, and near the airport terminal. These changes are primarily within the airport and would not involve major changes in the visual character of the area. The roadway

modifications associated with Airport Link would not create an adverse change in visual impacts because the visual character of the area is already dominated by the North Airport Expressway and airport uses. The stations associated with the route would also have little adverse effect on views because of low viewer sensitivity and a relatively low degree of contrast with existing and future development in the area. Overall, the impact to visual resources would be expected to be low given the relatively low degree of change to an already developed urban landscape.

As the alignment passes along the west side of Washington Memorial Park Cemetery, the route would be at-grade in the median of the North Airport Expressway. Compared to the original project's elevated alignment along the cemetery's western edge, this would reduce viewer exposure on the west side of the cemetery. In addition to having the light rail alignment lower in elevation and further west than the original project, most of the existing trees and shrubs along the east side of the North Airport Expressway would not need to be removed and would continue to provide a visual buffer between the cemetery and the light rail structures. The Airport Link alternative would require relocation of parts of the North Airport Expressway and S. 170th Street and the addition of an access driveway along the west side of Washington Memorial Park Cemetery. These changes to roads in the project corridor would not be expected to change views or visual character in the project corridor much; however, some shrubs or trees in the area might need to be removed. Where appropriate, these plantings would be replaced to maintain visual screens and the overall character of the landscape. As light rail alignment angles northwest, away from International Boulevard, the existing Radisson Hotel building would be removed. However, the overall impact to visual resources would be expected to be low given the relatively low degree of change to an already developed urban landscape and the lower sensitivity of viewers in this area.

In SeaTac's City Center, located in the Bow Lake area south of S. 170th Street, the elevated guideway would be visible for a short stretch along International Boulevard, although in much of this area it would be behind the northbound expressway and less visible. An elevated pedestrian walkway would cross over International Boulevard just north of S. 176th Street, linking the station and the airport with the developed areas to the east. Entrance structures for the walkway and the walkway itself would become a noticeable part of views along International Boulevard, but both the guideway and the walkway would be visually compatible with the large scale of existing structures, including an office tower, a hotel, and airport buildings (Figure 3.5-1). Replacement plantings can also be used to effectively minimize the visual change that this alternative would have along International Boulevard, consistent with the recent improvements to the roadway.

Conditions to the south of the Airport/SeaTac Station would remain similar to the original project. A provisional station at S. 184th Street that also involved an elevated pedestrian walkway over International Boulevard was part of the original project, but the station is no longer being considered. At the south end of this segment, along 28th Avenue S., the aerial guideway would pass over an area in which the topography drops steeply over a short distance. As with the original project, the alignment is relatively level, and, therefore, the aerial structure would be noticeably taller than in other parts of the alignment. The elevated guideway would pass by several residential properties and behind hotel, office, and storage buildings. In this area, overhead electrical transmission lines also exist. The S. 200th Station and its park-and-ride would occupy properties north and south of S. 200th Street. In addition to the elevated guideways, a bridging platform would cross over S. 200th Street, and tail tracks would extend to the south of S. 200th Street. A two to four story parking structure would be built on an existing park-and-fly lot; the structure's design has not been finalized due to the potential for Sound Transit to lease spaces in a parking structure to be built by the current private property owner. With the exception of the parking structure, which is more consistent with SeaTac's HCT district ordinance, the scale and visual effect of Airport Link in this area is similar to the original project. The parking structure would be similar in scale to other developments in the area, including multi-story hotels, businesses, and government facilities. Overall, relatively low viewer exposure and sensitivity in this area would result in moderate impact levels from this structure. The changes compared to the original project are minimal, and the effects of Airport Link are anticipated to be similar to the original project.



Existing view looking north at the intersection of International Boulevard and S. 176th Street.

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Visual Simulation of Airport/SeaTac Station and Pedestrian Bridge.

Sound Transit is committed to a public process that would determine design solutions that are appropriate and that carefully consider the preferences and requirements of the public, property owners, and stakeholders. The design process would incorporate features that would reduce visual impacts of the light rail project and maximize urban design benefits of the project, particularly stations, which could improve visual and aesthetic conditions. For instance, at the Airport/SeaTac and S. 200th Stations, Sound Transit would integrate facilities with area redevelopment plans as appropriate. Sound Transit has instituted several system-wide design elements for the Initial Segment that would also be implemented for Airport Link. This includes art programs and signage. Other measures to minimize visual effects include:

- Minimizing the height of elevated guideways to limit their visibility generally to the extent needed by required vertical clearances.
- Minimizing clearing for construction and operation.
- Planting appropriate vegetation in and adjoining the project right-of-way to replace existing street trees and greenbelts and/or to provide screening for sensitive visual resources and viewers.
- Replanting remainder parcels with grass or simple plantings, maintaining them, and pursuing their redevelopment for land uses that are feasible and consistent with neighborhood plans, such as residential, commercial, or open space uses.
- Shielding exterior lighting at stations and park-and-rides to minimize the amount of light and glare that would be visible from residential areas, streets, and highways.

3.5.3 Mitigation

No mitigation is required.

3.6 AIR QUALITY

3.6.1 Affected Environment

3.6.1.1 Regulatory Setting

The major airborne pollutants of interest in the Central Puget Sound region include carbon monoxide (CO), particulate matter, ground-level ozone, and the ozone precursors, which are hydrocarbons and oxides of nitrogen (NO_x). These regulated pollutants are among those commonly referred to as criteria pollutants. National Ambient Air Quality Standards (NAAQS) identify criteria pollutant concentrations that must not be exceeded over specified time periods.

Primary air quality standards are defined to protect public health, and secondary standards are intended to protect the natural environment. Table 3.6-1 shows the primary and secondary NAAQS for the major airborne pollutants of concern. The Washington State Department of Ecology (Ecology) has adopted state and local ambient air quality standards that are equivalent to the national standards.

The United States Environmental Protection Agency (U.S. EPA) revised the ozone standard in 1997 from 0.12 parts per million (ppm) (1-hour average) to 0.08 ppm (8-hour average). The region, an attainment maintenance area for the old ozone standard since 1996, has been designated as in attainment of the 8-hour ozone standard. The 1-hour NAAQS no longer applies to the area since June 15, 2004. In addition to the current standards established for particulate matter less than 10 microns in diameter (PM₁₀), the U.S. EPA adopted new federal air quality standards for particulate matter less than 2.5 microns in diameter (PM_{2.5}). The Puget Sound Clean Air Agency's preliminary analysis indicates that the region should be able to attain the U.S. EPA's revised standards for PM_{2.5}. The U.S. EPA is expected to withdraw the PM₁₀ standard once the area has been formally designated for PM_{2.5}.

**Table 3.6-1
National, State, and Local Ambient Air Quality Standards**

Pollutant	National		Washington State	Puget Sound Region
	Primary	Secondary		
Carbon Monoxide (CO)				
8-Hour Average	9 ppm	NS	9 ppm	9 ppm
1-Hour Average	35 ppm	NS	35 ppm	35 ppm
Ozone				
1-Hour Average	0.12 ppm	0.12 ppm	0.12 ppm	0.12 ppm
8-Hour Average	0.08 ppm	0.08 ppm		
Lead				
Maximum Arithmetic Mean (averaged over calendar quarter)	1.5µg/m ³	1.5µg/m ³	NS	1.5µg/m ³
Particulate Matter (PM₁₀)				
Annual Arithmetic Average	50 µg/m ³	50 µg/m ³	50 µg/m ³	50 µg/m ³
24-Hour Average*	150 µg/m ³	150 µg/m ³	150 µg/m ³	150 µg/m ³
Particulate Matter (PM_{2.5})				
Annual Arithmetic Average	15 µg/m ³	15 µg/m ³	15 µg/m ³	15 µg/m ³
24-Hour Average	65 µg/m ³	65 µg/m ³	65 µg/m ³	65 µg/m ³
Particulate Matter (TSP)				
Annual Geometric Average	NS	NS	60 µg/m ³	NS
24-Hour Average	NS	NS	150 µg/m ³	NS

Source: U.S. EPA <http://www.epa.gov/air/criteria.html>, accessed on March 11, 2005, last updated October 1, 2004

Notes: µg/m³ = micrograms per cubic meter

NS = no standard established

TSP = total suspended particulate matter

The Central Puget Sound region is now in attainment for all criteria pollutants. The U.S. EPA redesignated the region to maintenance attainment status on October 10, 1996, for CO and on November 26, 1996, for ground-level ozone.

3.6.1.2 Conformity Requirements

The Clean Air Act Amendments of 1990 require federal agencies to ensure that their actions conform to the appropriate State Implementation Plan (SIP). The SIP is a plan that provides for implementation, maintenance, and enforcement of the NAAQS, and includes emission limitations and control measures to attain and maintain the NAAQS. Conformity is defined as demonstrating that a project conforms to the SIP's purpose of eliminating or reducing the severity and number of violations of the ambient air quality standards and achieving expeditious attainment of such standards. Regulations have been promulgated for both Transportation Conformity and for General Conformity, as described below.

Transportation Conformity

In the state of Washington, transportation projects located in maintenance and nonattainment areas are subject to the conformity requirements imposed by the federal Clean Air Act (CAA) and the Washington Clean Air Act (WCAA). The federal CAA requires that transportation projects located in nonattainment and maintenance areas conform to the SIP, the state's plan for meeting and maintaining compliance with the NAAQS. U.S. EPA regulations (40 CFR Parts 51 and 93) implement the CAA. Conformity to a SIP means that transportation activities would not produce new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS.

The WCAA similarly states that approval or funding of a project within, or affecting, a nonattainment area is contingent on determining that it conforms to the SIP, as required by the federal CAA. In addition, under the state's Growth Management Act, projects that are regionally significant must be included in the Regional Transportation Plan and the Transportation Improvement Program.

As the proposed Airport Link is a transportation project located in a maintenance area for CO and ozone, a project-level Transportation Conformity analysis was performed and is included in this document.

General Conformity

Federal actions for projects located in a nonattainment or attainment maintenance area are subject to General Conformity regulations (40 CFR Part 93, Subpart B) unless (1) the action is covered by Transportation Conformity, (2) the project's total direct or indirect emissions would equal or exceed the annual *de minimis* emissions levels in 40 CFR 93.153, (3) the project emissions are regionally significant, or (4) the project is otherwise exempt. Because the Puget Sound region is a maintenance area for ozone and CO, the applicable *de minimis* emission levels are 100 tons per year each for CO, NO_x, and volatile organic compounds (VOCs). Total direct and indirect emissions are the sum of the emissions increases and decreases from the proposed action, or the net change in emissions anticipated to occur as a result of the proposed action. Therefore, a conformity determination is not required if the differences in emissions with the proposed action, as compared with not taking the action (the No-Build alternative), are below the applicable *de minimis* levels.

While the Airport Link is a transportation project which is covered by Transportation Conformity, there are several proposed related projects to be undertaken by the Port of Seattle which are not directly related to the transportation aspects of the light rail construction and operation. Such actions would also require federal approval from parties including the FAA, which would also be responsible for approving the related projects as well as approval of the Airport Layout Plan. Approval of the related projects and the Airport Layout Plan would require FAA's actions to also be shown to conform. As some of the related actions would not be subject to Transportation Conformity, they would then be subject to General Conformity. Therefore, a General Conformity applicability analysis was conducted to enable comparison of the project-related emissions to the *de minimis* thresholds for this project.

3.6.2 Impacts

Air quality impacts were determined by using estimates of vehicle emissions, dispersion modeling, and by evaluating possible mitigation measures. Emission estimates were used both for a regional burden analysis (total production of specific pollutants) and as input to the computer dispersion model, which was used to calculate CO concentrations at specific intersections. The emission burden analyses were performed for 2004 (current conditions), 2015, and 2030. CO concentrations were calculated for the existing condition (2004), as well as projected for 2015 and 2030 for the No-Build and Build alternatives. The year 2015 was chosen to represent the project opening year. The year 2030 was chosen to coincide with the regional model design year, as presented in PSRC's Metropolitan Transportation Plan (Destination 2030, PSRC, Seattle, WA, May 24, 2001).

3.6.2.1 Regional Impacts

To compare original project and Airport Link versus No-Build contributions to the regional airshed, tailpipe emissions of CO, VOCs, and NO_x were estimated based on regional travel demand forecasts discussed in Section 3.1, assuming light rail service to the S. 200th Station. MOBILE6.2 emission factors, in grams per vehicle mile traveled, along with projected vehicle miles traveled (VMT), helped estimate the daily emissions for each scenario analyzed. Table 3.6-2 summarizes the results of this analysis, showing the daily estimated emissions for the base year (2004), the project opening year (2015), and the forecast year (2030) for the original project, Airport Link, and No-Build alternatives.

As Table 3.6-2 shows, both the original project and Airport Link would result in lower mobile source pollutant emissions as compared to the No-Build alternative. The analysis shows that Airport Link, as well as the original project adopted in 1999, would contribute to slight reductions in regional mobile source emissions.

Table 3.6-2
Burden Analysis Emissions (metric tons/day) under the Original Project and
Airport Link versus No-Build Alternatives

Scenario	CO	VOCs	NO _x
Base Year (2004)	1,454.1	150.3	180.1
2015 No-Build	1,094.6	117.4	150.3
2015 Original Project	1,092.5	117.1	150.0
<i>2015 Airport Link</i>	<i>1,092.8</i>	<i>117.2</i>	<i>150.0</i>
2030 No-Build	1,177.6	125.5	153.9
2030 Original Project	1,173.9	125.1	153.5
<i>2030 Airport Link</i>	<i>1,174.3</i>	<i>125.1</i>	<i>153.5</i>

Note: Airport Link is shown in italics.

3.6.2.2 No-Build Condition – Air Quality Trends

Emission projections and ongoing monitoring throughout the Central Puget Sound region indicate that the ambient air pollution concentrations for CO and PM₁₀ have been decreasing over the past decade. Measured ozone concentrations, in contrast, have remained fairly static. The decline of CO is due primarily to improvements made to emission controls on motor vehicles and the rate of vehicle turnover to cleaner vehicles. Over time, however, other factors have the potential to counteract this downward emission trend. For example, each year more motor vehicles travel on the region's roadways, and people in the area are making more trips of greater distance. Estimates by the Puget Sound Regional Council (PSRC 1995) indicate that emissions of CO may turn upward as early as 2010, making renewed violations of CO standards possible. This situation could result in the region's redesignation to nonattainment status, forcing more stringent constraints on travel and economic growth and the possible loss of state transportation funds for highway expansion (PSRC 1998).

3.6.2.3 Airport Link

Airport Link impacts were analyzed by predicting CO concentrations at the intersection level. The first task in the CO microscale (hotspot) analysis was to select intersections from which to evaluate localized air quality impacts. Air quality specialists evaluated the intersections in the vicinity of the Airport Link to identify locations requiring microscale air quality analysis. The procedure used for year 2015 estimated PM peak hour traffic volume and Level of Service (LOS) to select the project area roadway intersections most likely to produce CO violations under Airport Link.

The project's transportation impact analysis supplied information used in the intersection screening process. In addition to the regional highway and transit ridership modeling results, the transportation analysis included LOS calculations for intersections potentially affected by the light rail guideways, stations, and associated roadway projects. The intersection screening process consisted of the following steps:

- Identify and rank the intersections in the vicinity of the Airport Link, using 2015 estimated traffic volumes.
- Identify and rank the intersections in the vicinity of the Airport Link, using 2015 LOS and average vehicular delay.
- Select the locations for analysis from among the highest volume and worst LOS intersections.

Table 3.6-3 lists the modeled locations, along with forecasted 2015 total intersection traffic volumes and LOS. The data shown are for alternatives that resulted in the highest projected delay in each segment prior to the inclusion of design changes or mitigation to improve LOS.

**Table 3.6-3
Intersection Screening Results – 2015 Worst-Case Alternative (Before Mitigation)**

Intersection	Alternative	PM Peak Hour Volume	LOS
International Boulevard/S. 160th Street	Airport Link	52,340	F
International Boulevard/S. 170th Street	Airport Link	56,550	F
International Boulevard/S. 188th Street	Airport Link	67,740	F
International Boulevard/S. 200th Street	Airport Link	53,220	F

Modeled receptors were located on either side of the road, at sites accessible to the public, generally near intersection corners and near each approach and departure link. The receptors were placed no closer than 3 meters from the edge of the road. Project-related CO concentrations were predicted by the U.S. EPA's CAL3QHC model (U.S. EPA version 95221). This model is conservative, meaning it tends to overpredict emissions.

Although NAAQS exist for both the 1- and 8-hour averaging periods, historic monitoring data show that the 8-hour NAAQS of 9.0 ppm is more likely to be exceeded than the 35 ppm 1-hour NAAQS. Therefore, for the purposes of this document, only the 8-hour model results are reported. Table 3.6-4 summarizes these results for each intersection and for each alternative modeled.

**Table 3.6-4
8-Hour CO Concentrations (in ppm) Under Existing, Airport Link, and No-Build Conditions**

Segment/Intersection	2004 Existing	2015 No-Build	2015 Airport Link	2030 No-Build	2030 Airport Link
International Boulevard/S. 160th Street	7.35	5.74	5.74	5.60	5.60
International Boulevard/S. 170th Street	8.47	6.30	6.30	5.74	5.74
International Boulevard/S. 188th Street	8.26	6.79	7.00	5.88	5.88
International Boulevard/S. 200th Street	8.12	6.02	6.30	5.25	5.32
NAAQS (8-hour)	9	9	9	9	9

For some locations, the traffic analysis indicated that volumes and turning movements would be the same for Airport Link as for the No-Build condition, so the project would not alter air quality conditions at those locations. This finding applies to the project under either the Airport/SeaTac or S. 200th Station terminal options. No new violations of the federal air quality standards would occur with Airport Link alternatives, nor would any predicted violations under No-Build conditions increase in frequency or severity under the Build alternative.

3.6.2.4 *Conformity Determination*

Projects located in nonattainment or maintenance areas for a given pollutant must comply with provisions of the 1990 Clean Air Act Amendments. They also must comply with the promulgated state and federal rules that require a determination of conformity with the SIP. Transportation projects are required to comply with Transportation Conformity requirements (40 CFR 93.100-129), while other federal actions must comply with General Conformity requirements (40 CFR 93.150-160). The light rail project is a transportation project located in the Puget Sound region, a maintenance area for both CO and ozone. However, there are several elements of Airport Link that would not be subject to Transportation Conformity. These projects would occur on airport property and would separately require FAA approval. Therefore, both Transportation and General Conformity applicability was evaluated.

Transportation Conformity

The proposed Airport Link project is included in the region's long-range metropolitan transportation plan, Destination 2030, and the 2005-2007 Transportation Improvement Program (PSRC, October 28, 2004), both of which have been found to meet the conformity tests as identified by federal and state conformity regulations. Previous evaluations of Central Link, including for the Final EIS, Initial Segment EA, and the Tukwila Freeway Route SEIS, have also found that the light rail project meets conformity tests.

The results of the CO concentrations analysis at specific intersections (Table 3.6-4) show that neither Airport Link (including associated road projects) nor the original project would create a new CO violation of the NAAQS, and they would not worsen an existing violation. Therefore, the project would conform to the Washington SIP.

Currently no U.S. EPA-approved method exists for quantitatively predicting ozone concentrations at a given intersection. Photoreactive VOCs are a precursor to ozone formation in and around urban areas. Based on the emissions burden analysis performed for the project, both the original project and the Airport Link alternatives would result in slight reductions in daily VOC emissions as compared to the No-Build alternative. These reductions can be attributed to small project-related decreases in vehicle trips and VMT. For ozone, the project's inclusion in a conforming Transportation Improvement Program is sufficient to demonstrate project level conformity to the SIP.

General Conformity

The general conformity applicability analysis was designed to conservatively estimate the emissions for the year in which total direct and indirect emissions from the project are greatest. Two forms of emissions were evaluated for the proposed project: (1) emissions during construction of the Airport Link and (2) project-related source operational emission changes after completion of the Airport Link. The following subsections identify the methodologies associated with each evaluation.

3.6.2.5 Construction Emissions

Construction emissions were calculated using representative emission factors, estimates of the equipment that would likely be used in constructing the proposed improvements, and equipment use duration. Although construction of the Airport Link and its related projects is anticipated to occur over a 3-year period (2006 to 2008), it was assumed that all activities would occur in one year, 2007. This assumption was made because the construction schedule has not yet been firmly established, so the year-by-year emissions would be difficult to estimate at this point. However, this assumption also provides a very conservative estimate of peak year emissions. Construction-related emissions were calculated for:

- Construction employees moving to and from the site.
- Movement of materials and supplies to the construction site.
- Site preparation (non-road construction equipment).
- Building demolition (non-road construction equipment).

Emissions from construction employee travel were calculated based on emission factors from MOBILE6.2, the estimated number of employees, and an average two-way 24-mile trip distance. On-road material transport emissions were also calculated based on the MOBILE6.2 emission factor for heavy-duty diesel vehicles assuming a 20-mile two-way trip. Non-road construction equipment (construction on site to prepare the site) emissions were calculated based on emission factors obtained from the EPA AP-42, Volume II, September 1985. Estimates of construction vehicle usage were estimated based on anticipated construction requirements, such as excavation quantities and concrete pouring. The calculations assume that the proposed project construction would occur over a 312-day construction year, about 8 hours a day, 6 days a week.

3.6.2.6 Ongoing Operational Emissions

Emissions calculated and presented in Table 3.6-2, Burden Analysis Emissions, indicate that both the original project and Airport Link represent a decrease in emissions as compared to the No-Build alternative. Therefore, the applicability analysis focuses on the year 2007, when construction emissions result in a temporary increase in air emissions.

The General Conformity rule requires that the net emissions change caused by the direct and indirect emissions must be compared with the *de minimis* thresholds. As noted in the prior section, the project operating emissions would slightly decrease. Construction emissions represent a temporary increase during a year prior to commencement of project operations. As there would be a reduction for which the project is not seeking to take credit, the construction emissions were then compared with the *de minimis* thresholds of 100 tons per year for this maintenance area. Table 3.6-5 shows that the emission increase for 2007 from construction activities is expected to remain below the *de minimis* threshold as specified in the General Conformity regulations. Therefore, a General Conformity determination is not required for this project. The emission calculation spreadsheet is included in Appendix I.

Table 3.6-5
Year 2007 Project Related Emissions (tons per year)

	CO	VOCs	NO _x	SO _x	Particulate Matter
Construction	20.8	2.3	8.1	0.4	13.2
Operations ¹	0	0	0	0	0
Total	20.8	2.3	8.1	0.4	13.2
<i>De minimis</i> Threshold	100	100	100	NA ²	NA ²

SO_x Sulfur oxides

¹ Operations will not begin until 2009.

² General Conformity applicability analysis is not required for SO_x and particulate matter.

3.6.3 Mitigation

No mitigation is required.

3.7 NOISE AND VIBRATION

The noise and vibration analysis procedures used for evaluating Airport Link are the same as used for the analysis of the original light rail project. These methods are described in more detail in the Final Supplemental EIS and the Final Environmental Impact Statement, Noise and Vibration Technical Report, Central Link Light Rail Transit Project, November 1999. The analysis considers impacts for light rail noise, light rail vibration, and traffic noise generated as a result of the light rail project or its related facilities and improvements. The level of impact considers the sensitivity of the receptor (a home, for example, is considered a sensitive receptor), the existing conditions, and the magnitude of the increase due to the project.

The equivalent sound level (L_{eq}) is an energy average sound level over a specific period of time. The day-night sound level (L_{dn}) is the equivalent sound level for a 24-hour period with an additional 10 dBA added to nighttime sound levels occurring between 10:00 PM and 7:00 AM.

FTA criteria and the 1999 Central Link Final EIS focus on average noise conditions over a 24-hour period. Noise that occurs at night (between 10:00 PM and 7:00 AM) is given a 10-dBA penalty and is reported as L_{dn} . A rural area with no major roads nearby would average around 45 dBA (L_{dn}), while a noisy residential area close to a major freeway would average around 70 dBA (L_{dn}). Most of the residential areas in the study corridor fall within this latter range. Figure 3.7-1 provides other typical L_{dn} values for rural and

urban areas. Equivalent sound levels that are not weighted for nighttime noise are expressed as L_{eq} . More detailed information on noise and noise measurement descriptors can be found in the Noise and Vibration Technical Report, Central Link Light Rail Transit Project, November 1999.

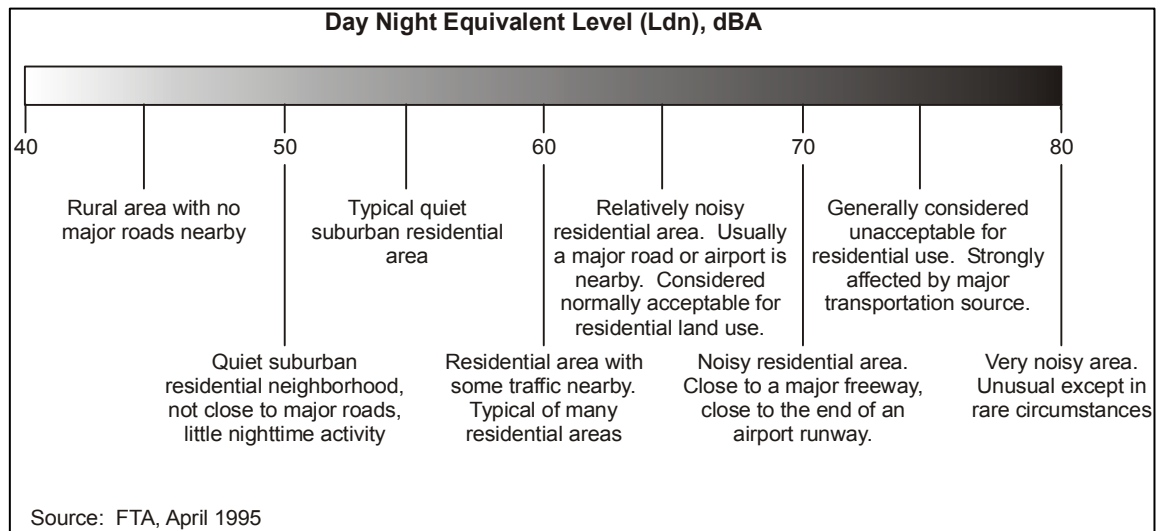


Figure 3.7-1 Typical L_{dn} Values for Rural and Urban Areas

The FTA has developed criteria for assessing noise impacts related to light rail transit projects. The standards outlined in the Transit Noise and Vibration Impact Assessment (FTA 1995) are based on research on community reaction to noise. The standards evaluate changes in existing noise conditions using a sliding scale; thus, the higher the level of existing noise, the less allowance there is for the light rail project to contribute additional noise. The FTA Noise Impact Criteria group sensitive land uses into the following three categories:

- Category 1: Buildings or parks where quiet is essential to their purpose.
- Category 2: Residences and buildings where people normally sleep. This includes residences, hospitals, and hotels where nighttime sensitivity is assumed to be of utmost importance.
- Category 3: Institutional land uses (including schools, libraries, and churches) with primarily daytime use that depend on quiet as an important part of operations.

L_{dn} is used to characterize noise exposure for residential areas (Category 2) and maximum 1-hour L_{eq} during the period that the facility is used for other noise-sensitive land uses such as school buildings (Categories 1 and 3).

The FTA criterion for noise sensitive structures is shown on Figure 3.7-2. The figure shows that as the existing noise level increases, the amount of noise that the project can add to the environment decreases. The figure also delineates between a moderate and severe noise impact.

In addition to light rail noise, this section also evaluates traffic noise impacts that are caused by light rail-related changes in roadway alignments and noise from ancillary facilities, such as the park-and-ride at S. 200th Street and the kiss-and-ride at the Airport/SeaTac Station.

Traffic noise impacts are evaluated using WSDOT and Federal Highway Administration (FHWA) procedures, and the park-and-ride is evaluated using the SeaTac Noise Control Ordinance.

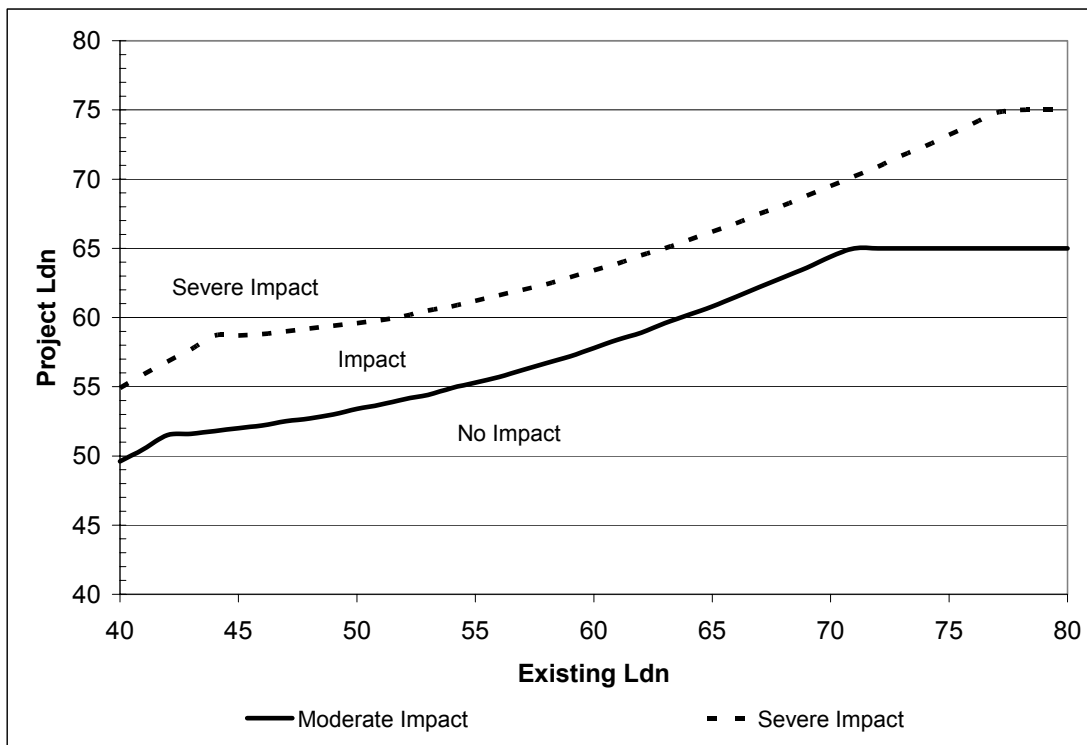


Figure 3.7-2 FTA Impact Criteria for Noise-Sensitive Land Uses

This EA also considers the potential impacts of vibration from light rail operations. Ground-borne vibration is a small but rapidly fluctuating motion transmitted through the ground. Although ground-borne vibration diminishes (or attenuates) over distance, some soil types transmit the vibration quite efficiently, while others do not. The response of humans, buildings, and sensitive equipment to vibration is described in this section in terms of the root-mean-square (RMS) velocity level in decibel units (VdB). For residential land uses, vibration impacts occur at 72 VdB, and as a point of reference, the average person can just barely perceive vibration velocity levels below 70 VdB.

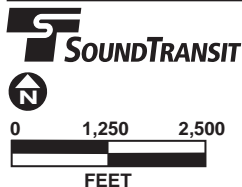
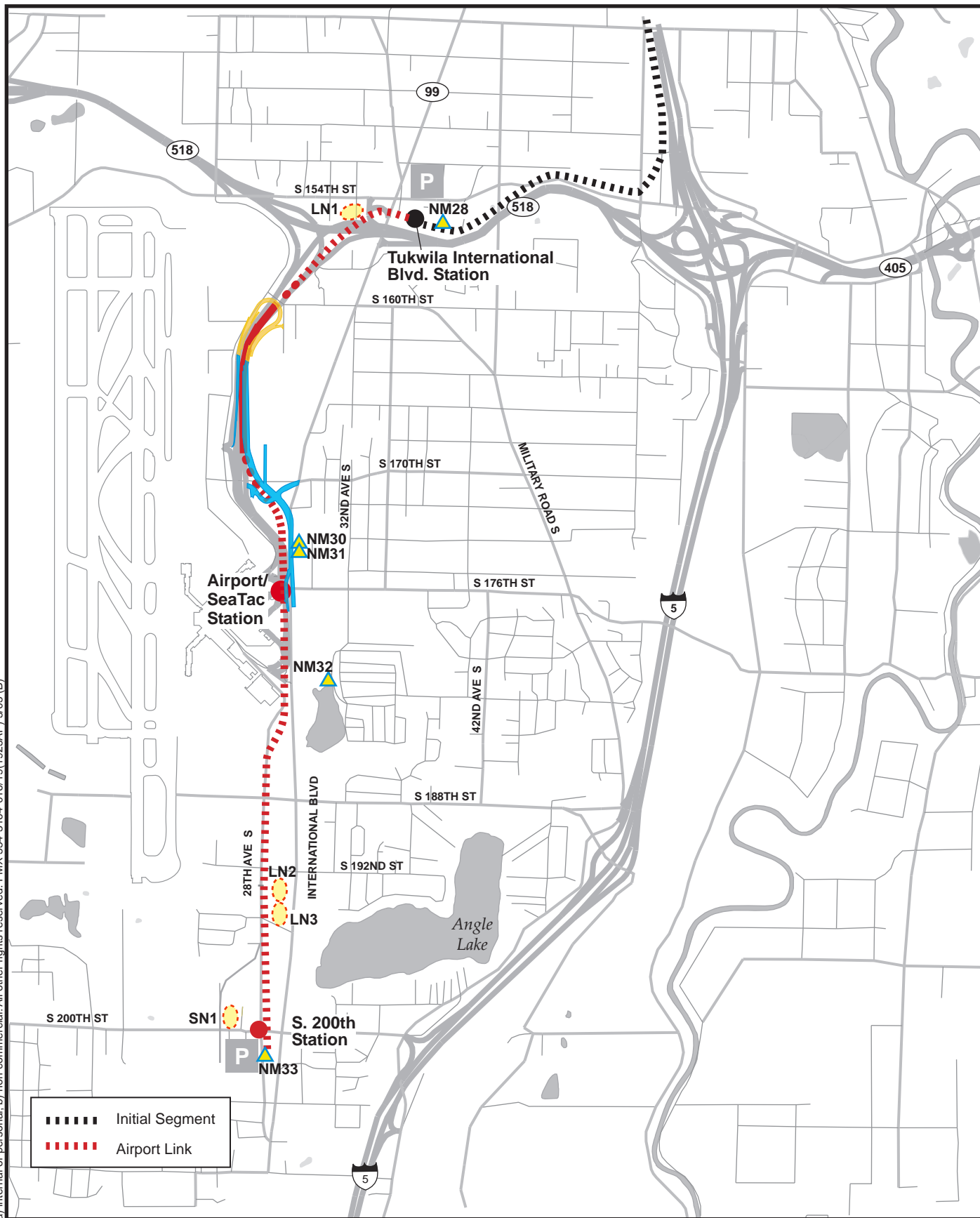
3.7.1 Affected Environment

Land use in the SeaTac segment is primarily commercial, with some residential, hotels, and motels located near the proposed project. The alignment leaves the Tukwila International Boulevard Station and crosses over International Boulevard and SR 518 on structure through an area that is entirely commercial, and continues in the median of the North Airport Expressway to the airport terminal.

South of the terminal, there are several hotels located in close proximity to the light rail alignment in addition to several single-family homes located along the east side of 28th Avenue S., between S. 192nd Street and S. 194th Street. All other land use south of the airport and north of the S. 200th Station is commercial or light industrial.

Major noise sources include aircraft from Sea-Tac Airport; vehicle traffic on International Boulevard, Sea-Tac Airport access roads, S. 192nd Street, and other arterial and collector roadways; and miscellaneous commercial and industrial activities. Noise monitoring was performed at five locations in the corridor in 1999 and again in 2002 (Figure 3.7-3). Along International Boulevard, the 24-hour noise levels were

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- Elevated
- At Grade
- Retained Cut-Fill
- Station
- Related Roadway Improvements
- P Park and Ride
- NM33 Noise Monitoring Locations
- LN1 Light Rail Noise Impacts
- SN1 Station Area Noise Impact
- S. 160th Street Loop Ramp Project

**Figure 3.7-3
Noise Monitoring
and Impact Locations**

measured at 71 dBA L_{dn} and the peak traffic hour noise levels were 68 dBA (Table 3.7-1). South of the airport, the 24-hour values were lower at 66 to 68 dBA L_{dn} , with peak traffic hour noise levels of 64 to 67 dBA. The projected 24-hour noise levels for the Bow Lake and Angle Lake residential areas are 67 to 69 dBA L_{dn} .

Table 3.7-1
Measured Noise Levels at Monitoring Locations

Noise Monitoring # and Location ¹		Land Use	Existing Noise Levels (dBA)	
			L_{dn}	L_{eq}
NM28	West Colonial Village	R	71	67
NM30	Holiday Inn Pacific Coast Highway	R/C	71	68
NM31	SeaTac Hilton International Boulevard	R	66	64
NM32	Bow Lake Residents at 31st Avenue S.	R	66	64
NM33	20229 28th Avenue S.	R	68	67

Source: Michael Minor and Associates, 1999–2002.

Notes: R=Residential C=Commercial

¹ Measurement locations are shown on Figure 3.7-3.

Primary vibration sources in the project corridor include buses, heavy trucks, and ongoing construction activities. Vibration from aircraft take-offs may also be a notable source of vibration in areas near the Sea-Tac Airport flight paths.

3.7.2 Impacts

3.7.2.1 No-Build

All of the existing noise sources described in the affected environment would be present under the No-Build alternative. The S. 160th Street Loop Ramp project and the RCF would revise some of the roadway characteristics in the S. 160th Street area, although this area is surrounded by commercial and airport uses and would not involve a major change from existing conditions. In general, noise levels in the area are expected to increase as aircraft and vehicle traffic increase.

3.7.2.2 Airport Link

Project staff performed an updated noise analysis based on advanced engineering and operating plans for the proposed project. The analysis used the same methods as given in the FTA Noise and Vibration Manual for a detailed noise and vibration analysis. Future project-related noise and vibration levels are based on measured levels from similar trains and are adjusted to account for the train speed, proposed operating schedule, distance from the train to the noise-sensitive property, and the type of track. The results are summarized in Table 3.7-2 and described below.

In the northern segment of the corridor, noise-sensitive residential land uses were identified on the north side of SR 518, between 30th and 32nd Avenues S., south of Southcenter Boulevard. The main concern in this area is the Corinthian Apartments located at 3039 S. 154th Street. The closest apartment building is approximately 75 feet from the alignment, which is on a 30-foot elevated structure. Noise levels from operation of the train are projected at 67 dBA L_{dn} . Given the existing noise levels in this area of 68 dBA L_{dn} , the noise from the project would result in a noise impact at apartments located in the southeastern section of the complex.

**Table 3.7-2
Future Light Rail Noise Levels and Impacts (L_{dn} in dBA)**

Map ID	Location and Description	Distance to Structure¹	Existing Noise	Light Rail Noise²	FTA Criteria (Severe)³	Impact (Severe)³
LN1	Corinthian Apartments	75 feet	68	67	63 (68)	Yes (No)
LN2	SFR ⁴ (28th Avenue S.)	85 feet	66	64	62 (67)	Yes (No)
LN2	SFR ⁴ (28th Avenue S.)	40 feet	66	66	62 (67)	Yes (No)
LN3	Comfort Inn	30 feet	68	67	63 (68)	No ⁵
LN3	Hampton Inn	75 feet	66	66	62 (67)	Yes (No)

¹ Distance from the noise-sensitive property to the proposed light rail structure.

² Noise levels from operation of the light rail.

³ FTA light rail noise impact criteria with severe impact in brackets ().

⁴ SFR = single-family residence.

⁵ There is no outdoor use at the Comfort Inn Hotel, and therefore no noise impact is identified

Noise levels along the southern portion of the alignment, between the airport terminal and the project terminus at S. 200th Street, are projected to increase by 0 to 3 dBA L_{dn} because of operation of the light rail. Light rail related noise impacts were identified at a cluster of single-family residences just south of S. 192nd Street, where noise levels are projected to increase by 1 to 3 dBA L_{dn}. The homes are located on the east side of 28th Avenue S. and are between 40 and 85 feet from the location of the light rail structure. The impacts are not considered severe under the FTA criteria.

There are several hotels located near the light rail alignment, including the Comfort Inn and Hampton Inn Hotels located along the west side of 28th Avenue S., between 192nd and 194th Avenues S. The Comfort Inn does not have any outdoor use that would be affected by the Link light rail project. Exterior project-related noise levels are projected at 67 dBA L_{dn}, which equals or exceeds the FTA criteria for exterior noise impacts based on the existing noise level of 66 dBA L_{dn}. Due to the lack of exterior use at this location, the main concern would be for interior noise levels. Because the hotel was constructed to withstand aircraft take-offs, interior noise levels are not projected to be affected by the light rail, and no noise impact was identified at this location.

The Hampton Inn Hotel has a swimming pool located in the front of the building, facing 28th Avenue S. and the proposed light rail tracks. Noise levels at the swimming pool are projected at 66 dBA, which equals or exceeds the FTA criteria for a noise impact. Because this is an outdoor use, this location would be considered a noise impact and noise mitigation measures are investigated for this location.

Because there are no roadway alignment changes that affect noise levels at noise-sensitive receivers, there are no project-related traffic noise impacts associated with this project. There were no vibration impacts identified in the project corridor.

Noise impacts were also identified at one of the two single-family residences near the west side of the S. 200th Station and park-and-ride due to bus activity (see SN1 on Figure 3.7-3). The noise impact is due to the buses accessing the bus station on the north side of S. 200th Street at nighttime between the hours of 10:00 pm and 7:00 am. Table 3.7-3 provide the results of the analysis at S. 200th Station. Locations identified with noise impacts are shown on Figure 3.7-3. Other areas, such as the kiss-and-ride and Airport/SeaTac Station at the airport terminal, are not projected to result in noise or vibration impacts, because either there are no noise-sensitive receivers in the area or the land use is commercial or industrial.

**Table 3.7-3
S 200th Station Noise Levels and Impacts (Ldn in dBA)**

Map ID	Location and Description	Distance to Structure¹	Existing Noise	Station Noise²	FTA Criteria (Severe)³	Impact (Severe)³
SN1	Residence on S. 200th Street	50 feet	71	68	65 (69)	Yes (No)
SN1	Residence north of S. 200th Street by approximately 225 ft	100 feet	68	62	63 (67)	Yes (No)

¹ Distance from the noise-sensitive property to the proposed bus travel lanes.

² Noise levels from operation of the station.

³ FTA noise impact criteria with severe impact in brackets ().

3.7.3 Mitigation

Sound Transit will provide reasonable and feasible noise mitigation in an effort to reduce noise levels at properties identified with noise impacts attributed to Airport Link to below the FTA or City of SeaTac criteria, as applicable. The main form of noise mitigation for transit projects is to install noise barriers along the elevated guideways or park-and-ride. In accordance with Sound Transit policy, if noise walls are not considered a reasonable and feasible form of noise mitigation, sound insulation of impacted structures may also be considered.

Noise mitigation for the Corinthian Apartments would consist of a noise wall along the elevated structure. The five noise impacts at single-family residences and the one at the Hampton Inn Hotel swimming pool would also be mitigated with noise walls on the east side of the elevated structure. The one potential noise impact at the S. 200th Station would be mitigated with a noise wall along the park-and-ride west property line. All noise walls would be designed to be effective at reducing noise levels at the affected areas to below the FTA criteria.

3.8 ECOSYSTEMS

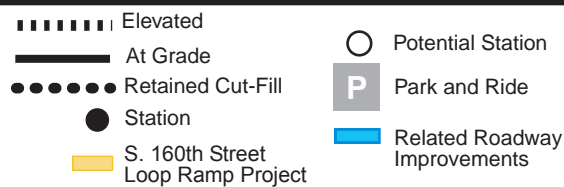
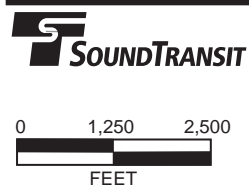
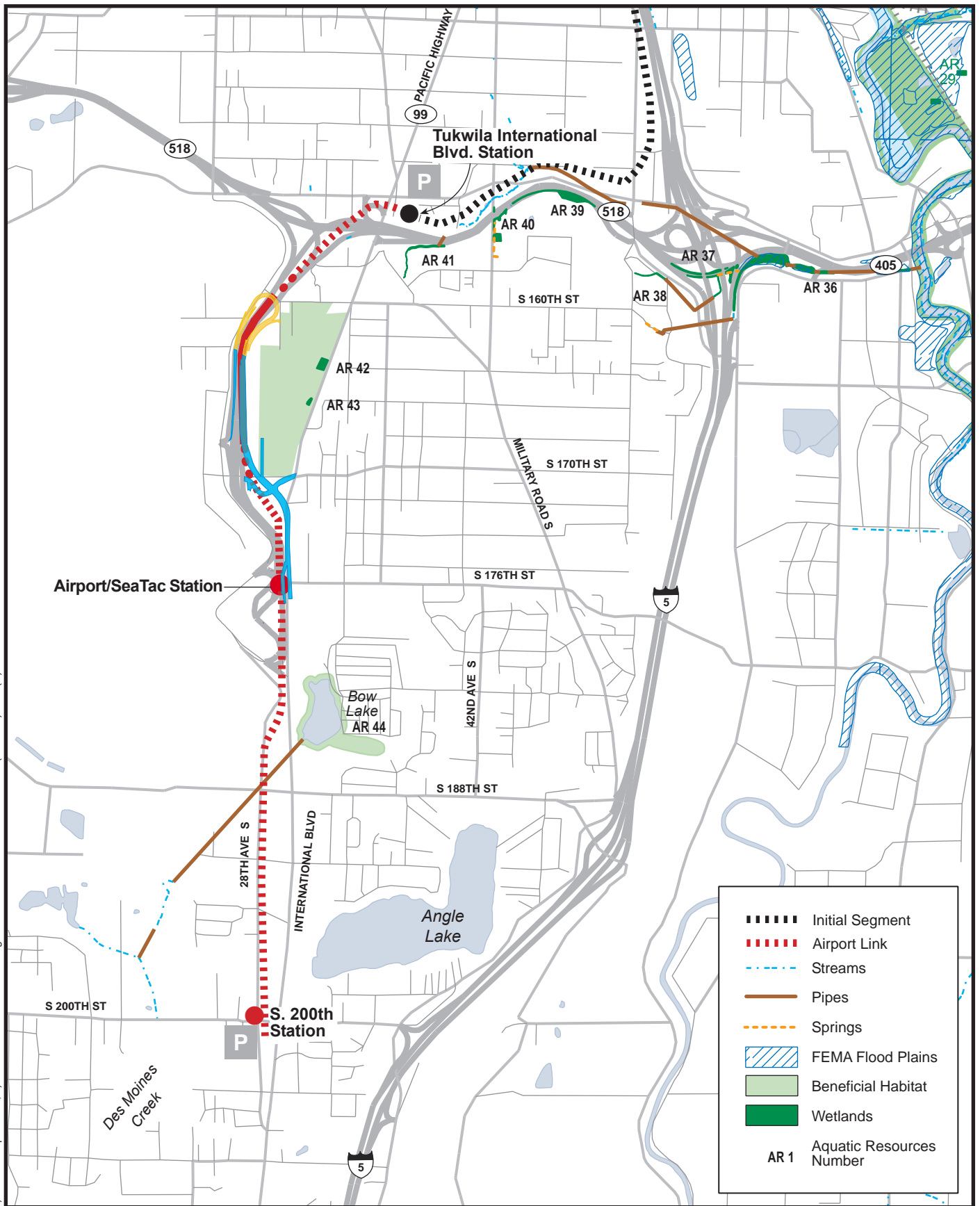
3.8.1 Affected Environment

Most of the areas that would be affected by the development of the Airport Link project have been previously developed with transportation facilities, buildings, or landscaped areas. Natural ecosystems are limited. As reported in the 1999 Central Link Final EIS and shown in Figure 3.8-1, wetlands in surrounding areas offer nesting and foraging habitat for songbirds and small mammals and habitat for some amphibians. Washington Memorial Park Cemetery in the vicinity of Airport Link is mostly used by common urban species. Bow Lake provides habitat for small mammals, amphibians, migratory songbirds, and waterfowl, as well as for foraging eagles, hawks, and owls.

Fish habitat in Bow and Angle lakes consists primarily of freshwater lake habitat with a shoreline bordered by residential development and boat docks. Both lakes support resident fish such as rainbow trout, largemouth bass, black crappie, pumpkinseed, yellow perch, three-spine stickleback, catfish, and sculpins (Des Moines 1997) (see page 4-115 of Central Link Final EIS).

As previously noted in the 1999 Central Link Final EIS, there are no threatened or endangered species in the area. A bald eagle nest was identified at Angle Lake, approximately 0.7 mile from the Airport Link route, but no use has been observed since 1996.

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**Figure 3.8-1
Aquatic Resources,
Floodplains and
Beneficial Habitat**

Bow Lake (AR-44) collects runoff from SeaTac's downtown area and has a piped outlet to Des Moines Creek. The lake provides habitat for a variety of waterfowl and resident fish species. The wetland fringe surrounding the lake supplies additional habitat for small birds, mammals, and amphibians. These wetlands function to control erosion and improve water quality.

Wetland AR-42 is an isolated scrub-shrub/forested wetland at the northeast corner of the Washington Memorial Park Cemetery. Wetland AR-42 functions as a recharge area for Gilliam Creek and provides stormwater detention for runoff from adjacent property (Metro Transit 1993).

3.8.2 Impacts

3.8.2.1 No-Build

The No-Build alternative would maintain the existing environmental conditions and ecosystem characteristics described above in the Affected Environment section. The area is heavily developed and consists predominantly of impervious surface. The projects assumed for No-Build, including the RCF and the S. 160th Street Loop Ramp project, would not change ecosystems described in the Affected Environment. The No-Build alternative includes development that would increase impervious surfaces in the Des Moines and Gilliam Creek basin, but no impacts to wetlands or aquatic habitat are anticipated, and surface water would be managed in accordance with applicable regulations (see also Section 3.9). No impacts to ecosystems would be anticipated.

3.8.2.2 Airport Link

The Airport Link light rail guideways would be located on structures and at-grade in the median of the North Airport Expressway. At-grade sections would start at approximately S. 160th Street. The guideways would eliminate the grasses within the median and replace them with the light rail guideways. The relocation of the northbound expressway, the realignment of S. 170th Street, and access driveways would also generate new impervious surface. The vegetation that would be lost as a result of this realignment consists of grasses on the shoulders of the existing North Airport Expressway, ornamental vegetation on the Radisson Hotel site, and potentially street trees along the existing roadways. There would be reductions in existing impervious surface area associated with the removal of the hotel and its parking, the removal of the ramp from S. 170th Street to the northbound expressway, and the removal of the existing return ramps near the terminal.

From the Airport/SeaTac Station south to S. 200th Street, Airport Link follows the original project route. Impacts associated with this alignment include loss of 0.60 acre urban songbird habitat at the S. 200th Station. This alignment would generate no impacts to Bow Lake or Angle Lake. As in the original project, Airport Link assumes that trees removed from street rights-of-way would require permits and replacement.

There would be a minor increase in impervious surfaces in the Gilliam Creek basin, and an increase of about 400,000 square feet of impervious area in the Des Moines Creek watershed (see Section 4.9, Water Resources). These are both minor changes in terms of existing conditions in the watersheds, and stormwater detention and treatment for all new impervious surfaces would minimize impacts on streams, wetlands, and fish habitat. Overall, there would be no substantial impacts to ecosystems, water resources, or species that were not previously considered in the 1999 Central Link Final EIS.

3.8.3 Mitigation

No mitigation is required.

3.9 WATER RESOURCES

3.9.1 Affected Environment

Airport Link is located in the headwaters of both the Gilliam Creek and Des Moines Creek drainage basins. Gilliam Creek drainage basin covers approximately 3 square miles and begins near Pacific Highway S. and drains along SR 518 and empties into the Green River just south of I-405. The stream is in a natural channel in some locations, but several reaches of the stream downstream of the project are located in pipes. Gilliam Creek primarily receives water from urbanized areas, including Southcenter Mall, and from seeps and springs on the hills south of SR 518. Ecology did not list the stream on the 303(d) list of impaired and threatened waterbodies; however, it is anticipated that the stream may have typical urban stormwater problems from hydrocarbons, temperature, biological oxygen demand, and turbidity. Gilliam Creek is to be protected for the following designated uses: salmon and trout spawning; non-core salmon and trout rearing and migration; primary contact recreation; domestic, industrial, and agricultural water supply; livestock watering; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values (Ecology 2004).

Des Moines Creek drainage basin covers approximately 6 square miles and conveys flows to Puget Sound. Bow Lake, which forms the headwaters of the east fork of Des Moines Creek, receives stormwater from the surrounding basin, which is heavily developed. Historically the lake was a peat bog; however, peat was extracted for many years and the lake was partially filled during the 1950s and 1960s for commercial development. Des Moines Creek is to be protected for the following designated uses: salmon and trout spawning; core salmon and trout rearing and migration; extraordinary primary contact recreation; domestic, industrial, and agricultural water supply; livestock watering; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values (Ecology 2004). Ecology has listed Bow Lake in Category 2: Waters of Concern for total phosphorus problems (Ecology 2004). Des Moines Creek enters a pipe at the outlet of the lake and is conveyed in a pipe through the entire area affected by the project. Downstream of the project area, Ecology has listed the stream on the 303(d) list (Category 5) for exceeding dissolved oxygen and fecal coliform standards.

3.9.2 Impacts

3.9.2.1 No-Build

No-Build assumes that buses utilizing existing roads and paved surfaces provide the link between the station at S. 154th Street and Sea-Tac Airport. The Port of Seattle S. 160th Street Loop Ramp project would be constructed as part of a separate project and is assumed to be part of the No-Build conditions for this evaluation. Similarly, the RCF is also assumed to be part of the No-Build conditions. These projects would increase the amount of impervious surfaces within the Des Moines and Gilliam Creek watersheds, but they would also remove existing impervious surfaces, including pollutant-generating impervious surfaces. The Port would comply as appropriate with requirements of the Department of Ecology Stormwater manual for flow control for increased impervious surfaces (Ecology 2001). Overall, the net increase in impervious surface compared to existing conditions is expected to be low. Considering the removal of existing impervious surfaces and the development of stormwater collection and treatment systems in compliance with Ecology requirements, the effect will be an improvement in the stormwater conditions from existing conditions in the Des Moines and Gilliam Creek watersheds.

3.9.2.2 Airport Link

Airport Link would add light rail guideways between the Initial Segment's terminus at S. 154th Street to a new station at the airport at S. 176th Street, and the new station and park-and-ride at S. 200th Street. The impacts to the Gilliam Creek basin would remain the same as considered for the original project. A small portion of the guideway would be within the Gilliam Creek basin (0.4 acre). The remainder would be

located in the Des Moines Creek basin. Guideways, the station plaza, and elevated walkways associated with Airport Link would add a non-pollutant-generating impervious surface (non-PGIS). The kiss-and-ride area would create new pollutant-generating impervious surface (PGIS) in the Des Moines Creek drainage basin (Table 3.9-1). The proposed station and park-and-ride at S. 200th Street would create 130,600 square feet of new impervious surface area. This does not assume reductions in currently paved PGIS and non-PGIS areas that may be replaced by the S. 200th Station. The net increases would be considerably lower.

**Table 3.9-1
Summary of New Impervious Surfaces in the Des Moines Creek Drainage Basin**

Alternative	Area (square feet)	
	PGIS ¹	Non-PGIS
Airport Link		
S. 200th Station area and park-and-ride	130,600	--
Road Improvements ²	247,250	--
Station, Walkways, and Alignment		69,910
Subtotal	329,450	69,910
Original Project		
S. 200th Park-and-Ride	130,600	--
Road Improvements ³	7,200	--
Station, Walkways, and Alignment	--	80,000
Subtotal	137,800	80,000

¹ PGIS = pollutant-generating impervious surface

² This includes the kiss-and-ride and the Port of Seattle related projects. The related projects include relocated parking entrance and exit, S. 170th Street overcrossing, widened North Airport Expressway, and rebuilt airfield access tunnel.

³ Some road widening was included under the original project design.

To the north of Airport/SeaTac Station, the Airport Link alternative would result in the creation of slightly higher levels of new impervious surfaces compared to the original project evaluated in the 1999 Central Link Final EIS. This would be due to the roadway realignments covered under the Port of Seattle related projects that would be required for Airport Link. The net increase in impervious surfaces would be low relative to the Des Moines Creek watershed.

South of Airport/SeaTac Station, Airport Link would create the same amount of impervious surface as the original project. Overall impacts in the Des Moines Creek drainage basin would remain similar in magnitude, compared to the original project. Airport Link would remain within the range of alternatives examined in the 1999 Central Link Final EIS, and the net increase would be less than for at-grade alternatives that were previously considered.

3.9.3 Mitigation

Sound Transit and the Port would construct stormwater detention and water quality treatment facilities for Airport Link, including its associated roadway elements, meeting the requirements of the applicable federal, state and local rules, regulations and permits. The project would meet the applicable National Pollutant Discharge Elimination System (NPDES) permit requirements. Sound Transit would coordinate with the Port on the possibility that Port-owned existing or planned facilities can be used and to determine the type of retrofit or additional treatment required to ensure that runoff from Airport Link does not cause violation of the airport's NPDES permit. With these measures, no adverse impacts are anticipated.

It is anticipated that the Airport Link project would need to connect to Port-owned stormwater conveyance systems. Close coordination with the Port would be necessary to verify that existing and planned conveyance systems would have adequate capacity to convey runoff from Sound Transit.

3.10 ENERGY

3.10.1 Affected Environment

The affected environment for energy reflects existing and projected transportation-related energy use in the Sound Transit District and the potential of the project to disrupt energy supply or substantially affect regional demand. For the original project, no direct impacts were identified in the 1999 Central Link Final EIS. The analysis considered the energy that would be consumed by light rail in the regional transportation system, as well as considering indirect impacts such as changes in energy use. This information is the same for Airport Link.

3.10.2 Impacts

3.10.2.1 No-Build

With No-Build, no additional energy would be required for light rail beyond the Tukwila International Boulevard Station. However, shuttle buses would be required to complete the connection to the airport, and buses and other vehicles would consume energy to bring passengers from other areas to the Tukwila International Boulevard Station.

3.10.2.2 Airport Link

There would be only minor differences in energy usage between the original project and Airport Link. Airport Link would remain within the range of effects analyzed in the 1999 Central Link Final EIS. Although energy would be consumed to operate Airport Link, as described above, an overall energy savings is expected due to the reduction in VMT.

3.10.3 Mitigation

No mitigation is required.

3.11 GEOLOGY AND SOILS

3.11.1 Affected Environment

The geologic setting for Airport Link was described in the 1999 Central Link Final EIS and remains unchanged, with the updated project subject to the same geologic areas and conditions. The topography in the vicinity of the Airport Link is primarily an upland plateau with a few kettle lake features (Bow Lake, Angle Lake, Reba Lake, etc.). Much of the original topography has been modified for development of International Boulevard and Sea-Tac Airport and its accompanying facilities. Between S. 188th Street and S. 192nd Street, the former path of the Des Moines Creek is evident as a lowland swale feature.

The Uniform Building Code (ICBO 1997) defines the Puget Sound region as Seismic Zone 3, which represents an area susceptible to moderately high seismic activity. For comparison, much of Alaska and California are within Seismic Zone 4 and are susceptible to greater seismic activity. Since the 1850s, over 25 earthquakes of Magnitude 5.0 or greater have occurred in the Puget Sound region.

There are glacial till soils throughout most of the light rail corridor, with lower land soils being formed by lake and river deposits. In the vicinity of the airport, glacial till typically consists of an overcompacted mixture of gravelly sand with scattered cobbles and boulders in sandy silt matrix. Lake and stream deposits

typically are composed of silt, sand, gravel, and clay. Bedrock is also exposed or near the surface in some locations. Figure 3.11-1 includes the surficial geology in the corridor. The Geology Technical Back-up (Sound Transit 1999) provides additional detail on localized conditions where Airport Link and the related roadway projects would be built and operated. The north and south ends of Airport Link are mostly glacial till with minor outwash (silt, sand, and gravel). Between S. 176th Street and just north of S. 188th Street (the area developed for the airport), much of the area is modified land, including fill and regraded areas. In areas, up to 20 feet of fill overlying glacial till may be present.

Based on previous subsurface explorations near the airport, perched groundwater may be encountered at various depths from 10 to 30 feet below ground surface.

Areas where severe shaking and instability may occur during an earthquake (known as liquefaction-susceptible areas) have not been mapped in the immediate vicinity of Airport Link, but zones have been mapped southeast and west of the SR 518/Highway 99 interchange, southeast of the proposed Airport/SeaTac Station, southwest of the intersection of S. 188th Street and International Boulevard, and southwest of the proposed S. 200th Station.

3.11.2 Impacts

3.11.2.1 No-Build

No geological impacts would be expected under the proposed No-Build alternative.

3.11.2.2 Airport Link

Airport Link has low liquefaction potential and avoids mapped liquefaction zones. The project also has little or no potential for landslide or inherent soil erosion hazards. Supports for some elevated portions of the Airport Link would be located in areas of existing fill. However, as with the original project and other portions of the Central Link project, the project design would address geologic conditions to minimize potential impacts to the light rail system. Similarly, the replaced or modified roadways, including bridges, retaining walls, and other structures, would also be designed to address geologic conditions.

3.11.3 Mitigation

Based on the current project design, incorporating best management practices and following current design standards, no mitigation is required, and adverse geology and soils impacts would be avoided.

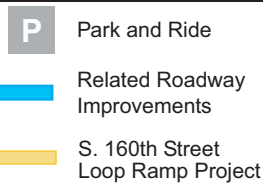
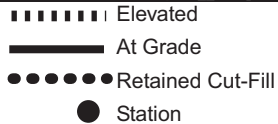
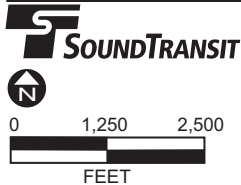
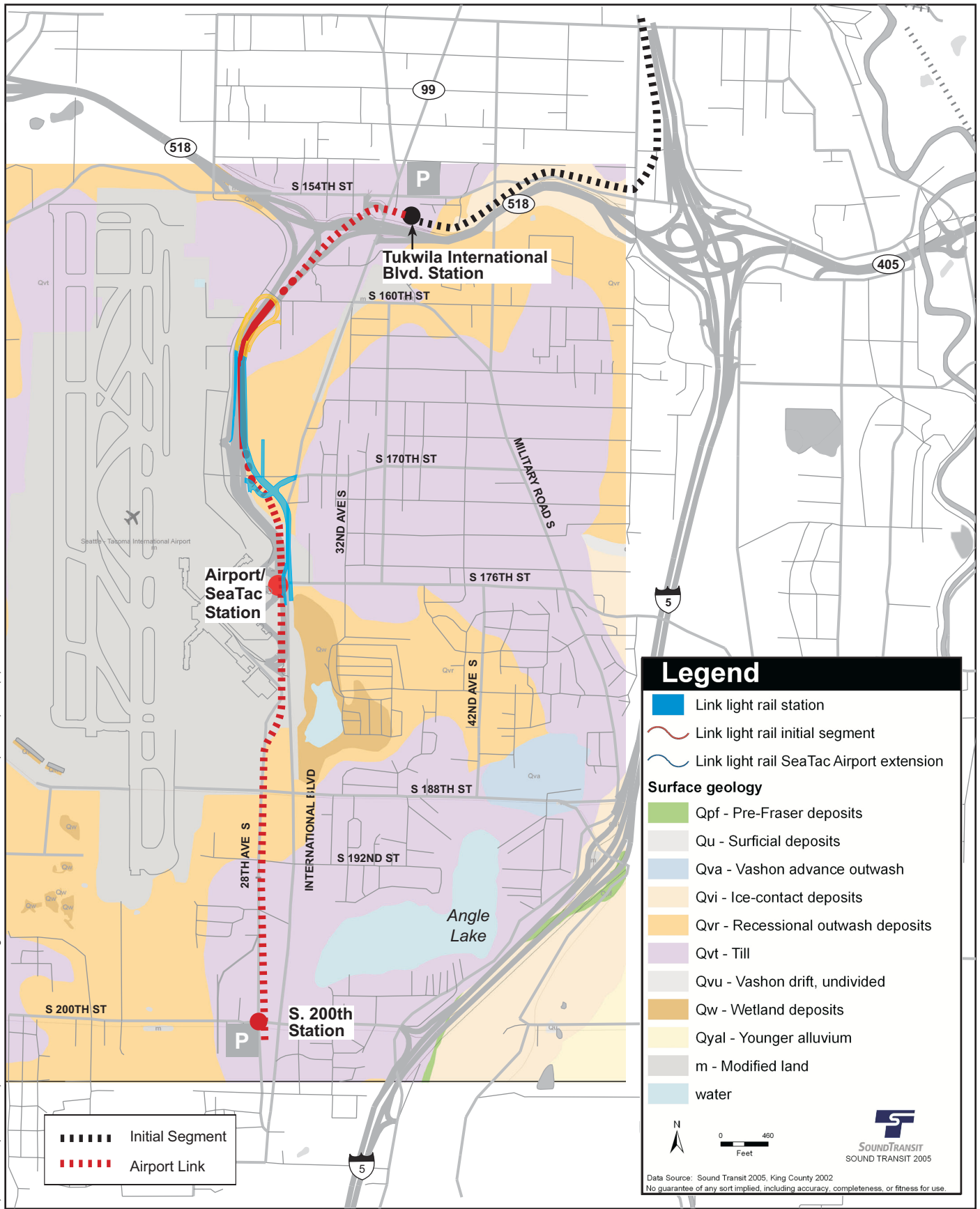
3.12 HAZARDOUS MATERIALS

3.12.1 Affected Environment

Airport Link may be located on or near properties that have released hazardous materials or waste to the environment or that manage hazardous materials or waste in significant quantities. For the analysis of impacts to human health and the environment, including exposure to hazardous materials, properties of concern include:

- (1) Documented Releases: hazardous material releases to the environment that have been reported.
- (2) Potential Releases: hazardous materials that have been managed, with no release reported.

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**Figure 3.11-1
Surficial Geology**

The Federal Resource Conservation and Recovery Act (RCRA) defines what is meant by hazardous waste. In Washington State, Ecology has been authorized by the U.S. EPA to implement most of the RCRA program. Nationally, the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), also known as Superfund, defines hazardous substances. Ecology operates a parallel program in Washington State under the Model Toxics Control Act (MTCA). Both programs are designed and administered to provide appropriate responses to the release of hazardous substances to the environment. MTCA also addresses releases of petroleum products not covered under federal statutes.

Toxic substances are a subset of hazardous substances additionally regulated by the federal Toxic Substances Control Act (TSCA). TSCA sites are tracked by the U.S. EPA. Additional controls governing disposal, beyond CERCLA and RCRA, have been specifically applied to polychlorinated biphenyls (PCBs).

Consistent with the methodologies previously used for the 1999 Central Link Final EIS, Table 3.12-1 summarizes the sites within 600 feet of the proposed alignment with a reported or potential release of hazardous materials to the environment. This buffer provides a reasonable basis for estimating the likelihood of encountering hazardous materials. Background technical information on the sites is available from Sound Transit, providing additional hazardous materials information, including maps of identified release sites, as well as regulatory and reconnaissance information.

**Table 3.12-1
Total Hazardous Materials Sites Along the Airport Link and the Original Project**

Alignment	Documented Release		Potential Release			Sites of Highest Concern		
	Petroleum	Non-Petroleum	UST	RCRA Generator	Recon.	Displaced/On Alignment		Adjacent
						Documented Release	Potential Release	Documented Release
Airport Link	27	1	16	21	2	6	6	13
Original Project	26	0	15	21	2	9	6	10

Note: UST = underground storage tank

Sites of highest concern include documented release sites located either on properties planned for displacement or directly on the alignment, as well as those with releases to groundwater adjacent to elevated sections. These sites present the potential for long-term impacts, as well as the potential to be impacted by construction. Appendix G provides additional hazardous materials information, including maps of identified release sites, as well as regulatory and reconnaissance information.

3.12.2 Impacts

Potential long-term impacts could result from the use of hazardous materials during system construction, operation, and maintenance and/or from encountering sites with existing soil or groundwater contamination.

The likelihood of impacts (releases) from operation and maintenance activities for light rail or the modified roadways is low. The likelihood of impacts from encountering existing contaminated sites depends upon the extent and character of contamination and would be minimized by identifying the sites and potential sites prior to construction and employing appropriate control, cleanup, and disposal measures. A variety of impacts, both beneficial and adverse, could result from encounters with existing hazardous materials sites:

- Contamination that otherwise would remain in place and potentially migrate may be discovered and addressed by the project.
- Contamination may be cleaned up faster to accommodate project construction.
- Contamination may be prevented by removing potential existing sources, such as underground storage tanks, before they release.

- Contaminated materials may be uncovered, allowing more direct exposure to the public.
- Contamination may be spread as a result of construction.

With proper control techniques, contaminated soil can be removed and disposed of or treated at locations designed for hazardous materials management. Contaminated groundwater may be treated on-site or transported for off-site treatment. By using licensed carriers and appropriately equipped vehicles, limited risk of public exposure would occur during soil removal and transport off-site. Any required treatment of groundwater would employ techniques engineered for the specific contaminants encountered.

Potential impacts associated with existing contaminated sites would be largely short-term (during construction). However, long-term impacts could occur where Sound Transit acquires properties that have ongoing cleanup responsibility (after construction). Such sites are typically associated with groundwater contamination or are large, complex sites such as landfills (discussed below). Sites with predominantly short-term impacts are discussed in Section 3.18.

3.12.2.1 No-Build

Under the No-Build alternative, no known release sites would be affected by light rail construction. Contamination that would otherwise be cleaned up or controlled by the project would remain with a potential to migrate. Also, existing potential sources (e.g., underground storage tanks) may not be removed and could result in future releases.

3.12.2.2 Airport Link

The light rail elements of Airport Link include one property acquisition with a petroleum release to groundwater and three property acquisitions involving petroleum releases to soil. All four of the properties to be acquired are associated with elevated track, including one at the airport and two at S. 200th Street. In addition, three potential release properties with historical use of hazardous materials are identified for acquisition.

The roadway modifications required for Airport Link are entirely within Port of Seattle property. The properties needed for these roadway elements belong to the Port of Seattle and would not be acquired by Sound Transit and would not pose long-term impacts involving ongoing cleanup responsibility by Sound Transit after construction. However, the existing and past uses of the sites include a variety of automotive, manufacturing, and airport-related uses, and contamination could be encountered during construction.

The hazardous materials sites identified along the original project were updated using the regulatory database review produced in 2004 for the new Airport Link assessment (Table 3.12-1).

The documented and potential release sites for the original project and Airport Link are similar; the original project alignment impacts have been updated using the most recently available information regarding known or potential site contamination. For contaminated sites of highest concern, the original project has 9 documented release sites on the alignment, including 7 properties that would be acquired. Airport Link has 6 sites on the alignment, 4 of which would be acquired. Of the documented release sites of highest concern that are to be acquired, each alignment has one acquisition of a property with a release to groundwater reported and identified. The remaining properties have releases to soils. Based on the hazardous materials information available at this time, impacts to displaced properties for the original project and Airport Link do not differ substantially.

3.12.3 Mitigation

Potential impacts will be minimized by avoiding contaminated sites or portions of sites, as practical. By minimizing encounters with hazardous materials, the project would reduce exposure risk, as well as potential delays, construction costs, and liability associated with site cleanup. However, avoiding contaminated sites would also reduce the opportunity for beneficial impacts associated with cleanup.

Properties left with residual contamination in excess of standard or negotiated cleanup levels would be clearly identified in documentation provided to Ecology. Sound Transit may be required to file restrictive covenants for certain properties to place limits on property transfer as well as allowable conditions for future invasive work. Federal and state regulations govern activities involving dangerous, hazardous, and toxic substances. (The 1999 Central Link Final EIS provides background regulatory information in more detail.) Sound Transit and the Port of Seattle will comply with these regulations, including the Washington State MTCA. With these measures, no known adverse impacts are associated with hazardous materials for Airport Link.

3.13 ELECTROMAGNETIC FIELDS

No electromagnetic field impacts are expected under the No-Build alternative, the original project, or Airport Link.

3.14 PUBLIC SERVICES

3.14.1 Affected Environment

The City of SeaTac Fire Department provides fire suppression and prevention, rescue, emergency medical services, and hazardous materials response services through three stations (Figure 3.14-1). The department has mutual aid agreements with all of the fire departments in King County and some automatic mutual aid agreements with the surrounding districts, like Tukwila Fire Department, Kent Fire Department, Port of Seattle Fire Department, District 26 (Des Moines), District 11 (North Highline), and District 2 (Burien). The SeaTac Fire Department's average incident response time in 1997, from receipt of notification to on-scene arrival, was 5 minutes (Wield 2004).

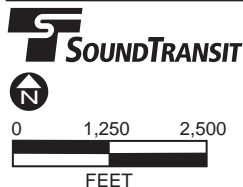
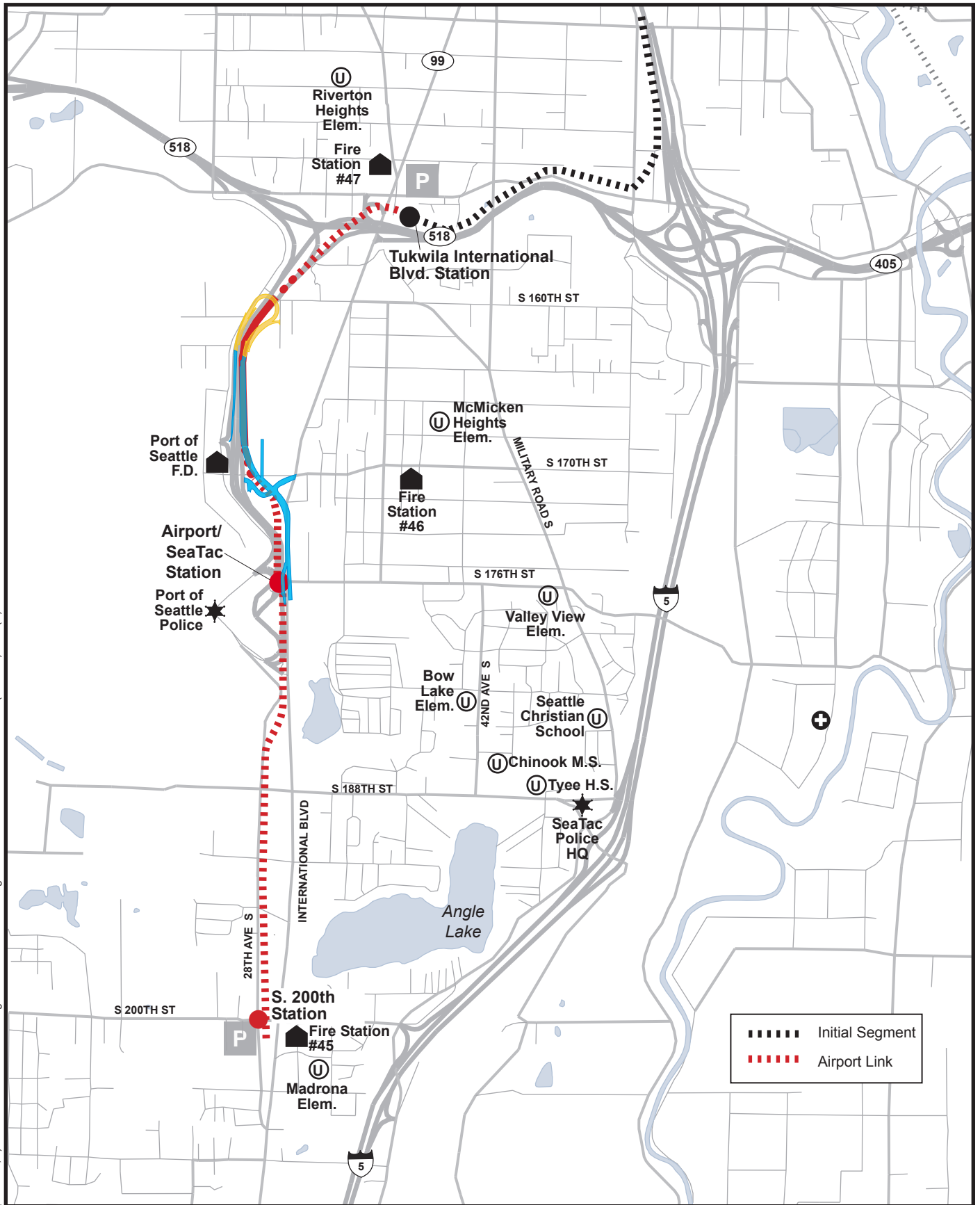
The Port of Seattle Fire Department provides fire protection and emergency medical services on Port of Seattle property, including Sea-Tac Airport. The department's station is located north of the airport's North Satellite building near Air Cargo Road and S. 170th Street (see Figure 3.14-1).

The City of SeaTac contracts for police services with the King County Sheriff's Office, which provides a shared and stand-alone police department with a 48-person staff that includes patrol officers, detectives, and support staff. SeaTac police headquarters are at 4800 S. 188th Street.

The Port of Seattle Police Department provides police protection services on Port-owned properties, including Sea-Tac Airport. The Port of Seattle Police Department provides special teams/units such as criminal investigations, tactical, bomb, K-9, SCUBA, boat operations, crisis negotiations, incident command, and other police services. Headquartered in the airport's main terminal building and the new Administrative Office Building at Concourse A (see Figure 3.14-1), the department consists of 108 commissioned officers and 31 support staff.

From 2002 to 2003, crimes in the City of SeaTac increased by 5 percent for serious crimes and 3 percent for lesser crimes. The incidence of serious crimes increased due to higher numbers of crimes against property. (Serious crimes, also known as Part I crimes, include homicide, rape, robbery, aggravated assault, burglary, larceny, auto theft, and arson.) Crimes against property represented approximately 93 percent of the 1,691 Part I crimes occurring in the city in 2003 (King County Sheriff's Office 2004). Lesser crimes, known as Part II crimes (simple assault, vandalism, forgery, prostitution, weapons offenses, drug and liquor violations, disorderly conduct, loitering, and other lesser offenses) in SeaTac increased approximately 3 percent from 2002 to 2003. Vandalism and fourth-degree assaults were by far the largest single categories of Part II offenses, accounting for 32 percent of all Part II crimes. The increase in crime from 2002 to 2003 countered a declining trend in crime. For example, in 1997 the total dispatched calls for service was 11,808 compared to 9,916 in 2003. Patrol district L2, which includes International Boulevard between S. 160th Street and S. 176th Street, exhibited the greatest increase in total crimes from 2002 to 2003—nearly 32 percent.

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- Elevated
- At Grade
- Retained Cut-Fill
- Station
- S. 160th Street Loop Ramp Project

- P Park and Ride
- Related Roadway Improvements

- Fire Stations
- Police
- Hospitals
- Schools

**Figure 3.14-1
Public and Community
Services Location Map**

Public schools in the SeaTac area (part of the Highline Public School District 401) include three elementary schools—Riverton Heights, McMicken Heights, and Madrona—near the route and stations. Four other Highline schools are located between 0.75 and 1 mile east of International Boulevard: Valley View and Bow Lake Elementary schools, Chinook Middle School, and Tyee High School. A private school, Seattle Christian Academy, is also located near the proposed routes (see Figure 3.14-1).

Additionally, Highline School District owns the property at 19215 28th Avenue S. This site was once Angle Lake School, but closed as a public school in 1975 and is currently leased for office space and community facility purposes.

The City of SeaTac currently has franchise agreements with SeaTac Disposal Company to collect residential and commercial solid waste, including garbage, construction debris, and land-clearing debris in SeaTac. SeaTac Disposal also collects residential recycling and yard waste. A number of companies provide services for business recycling.

3.14.2 Impacts

The assessment of impacts to public services examines four types of services: fire and emergency medical services, law enforcement, schools, and solid waste collection and disposal. Each service type is addressed separately. Sound Transit, the Port of Seattle, and City of SeaTac will coordinate on design and operations issues to ensure that impacts are adequately addressed.

3.14.2.1 No-Build

The No-Build alternative would not alter the delivery of the following public services in the project area: fire and emergency medical services, law enforcement, education and school bus service, and solid waste collection and disposal. Continued growth in the project corridor would increase demand on all public services.

3.14.2.2 Airport Link

As with the original project, the Airport Link light rail alignment would be within exclusive rights-of-way. The light rail would not cross any roadway at-grade, avoiding conflicts with existing emergency services or impacts to their response times. Access to fire and medical emergencies on elevated-track sections and stations would be more difficult than if access were at-grade; the modified sections of Airport Link include more sections that are at-grade or on retained fill, improving emergency access to the light rail guideway compared to the original project. As with the original project, access to emergencies along elevated sections would require ladder trucks. SeaTac Fire Department equipment has a maximum vertical reach of 30 feet, and portions of the guideways would exceed this reach. The locations where this could occur are similar for Airport Link and the original project, although Airport Link overall has less elevated sections than the original project. SeaTac currently has buildings that exceed this height, so accessing elevated light rail segments may be difficult but would not be a unique access issue to the SeaTac Fire Department. Mutual aid from the Port of Seattle, Tukwila, or other fire departments could be called to respond to emergencies on elevated guideway.

The roadway revisions required as part of Airport Link would relocate some portions of the existing circulation network within the airport, but no impact to public services would be anticipated.

Methods of access and evacuation during emergencies on elevated track sections and stations include using a second train on the adjacent track or using elevators, escalators, public stairs, and emergency stairs. Emergency responders would use water standpipes or other firefighting and emergency features incorporated with the light rail design. In unusual cases where using a second train is not practical, Sound Transit would follow state and local fire codes and National Fire Protection Association 130, which was developed especially for elevated systems. Specialized equipment and training would likely be required.

Firefighting, emergency medical, and other safety and security issues and resolutions are being discussed through Sound Transit's Link Fire/Life Safety Committee, including representatives from Sound Transit, Port of Seattle, King County Metro, and City of SeaTac's police and fire departments. Precise emergency procedures and necessary equipment would be determined during final design. As noted in Sound Transit's Safety and Security Management Plan (2001), an emergency response plan is being prepared in close coordination with the Link Fire/Life Safety Committee during preliminary design and would continue to evolve during final design, construction, and operation of the proposed facilities. This plan would be coordinated with applicable emergency response programs for the City of SeaTac, the Port of Seattle, and Sea-Tac Airport.

Light rail operations can increase the type of incidents to which emergency service providers respond; however, the experience of existing light rail service providers in the FTA's National Transit Database for the year 2002 (FTA 2003) and analysis done for the original project indicate that the increase would not be substantial. In addition, the national experience includes all kinds of transit systems, including those with at-grade operation or crossings, which are not proposed for Airport Link. Fully grade separated transit systems are expected to have a low potential for incidents or conflicts due to people or vehicles in the right-of-way, but they also required special handling for incidents on the guideways.

Safety impacts from Airport Link would remain similar to the original project, which are described in the 1999 Central Link Final EIS. Crime in transit facilities is directly related to crime in the surrounding neighborhood. Improved design and operational measures appear to decrease crime, and different types of station access (stairs, escalators, or elevators) do not appear to influence the amount of criminal activity. The presence of parking facilities may attract criminal activity, but appropriate lighting, surveillance, and measures such as incorporating crime prevention through environmental design (CPTED) principles in association with other security features of the system and security personnel would deter criminal activity and generally make light rail stations and parking facilities safer and more secure. Sound Transit's Link Design Criteria include many principles and guidelines designed to ensure safety and security throughout the light rail system.

As a result of the events in 2001, terrorism has received heightened awareness. Many measures that address security and safety issues not related to terrorism also would address terrorism concerns. As the level of design detail increases, design measures to prevent and respond to terrorism would continue to be developed and incorporated. Furthermore, Sound Transit has been working, and would continue to work, with the Port of Seattle, local law enforcement agencies, and emergency service providers to develop design and operating strategies to prevent and respond to terrorist activities that may affect the Airport Link project. The FAA would also review construction plans for Airport Link and the related improvements for the airport.

No substantial impacts to school bus routes, solid waste collection and disposal, or other public services would be expected.

Overall, impacts to fire and emergency medical services, law enforcement, school bus service, and solid waste disposal and collection resulting from the proposed project would be substantially the same as identified for the original project.

3.14.3 Mitigation

Sound Transit would implement its Safety and Security Management Plan (2001), which involves the continual development and reevaluation of safety and security procedures throughout project design, construction, and operation. Such evaluations would include an assessment of the need to provide security personnel at stations and park-and-rides, and a determination of who would provide the service. Developing and implementing design criteria, training programs, and implementation procedures would be an ongoing process in concert with the Fire/Life Safety Committee, which includes representatives of the Port of Seattle, the Port of Seattle police and fire departments, King County Metro, City of SeaTac police and fire departments, and Sound Transit safety and security specialists. The work of the committee would continue to address public service issues throughout design, construction, and operation. The Fire/Life Safety

Committee's work would include an evaluation of the need for specialized equipment and training to respond to emergencies and security concerns within the system, including potential terrorist attacks. Crime prevention through environmental design (CPTED) features and security measures, such as closed-circuit television, minimizing the number of platforms, and providing alarm systems, would be incorporated into the project as necessary to minimize impacts. Light rail trains could be equipped with intelligent traffic control technology in coordination with local fire and transportation departments. Security personnel could also be provided to rove between stations.

With mitigation, no impacts on public services would be expected.

3.15 UTILITIES

3.15.1 Affected Environment

Puget Sound Energy furnishes electric service south of S. 160th Street, while Seattle City Light serves areas north of S. 160th Street. Underground power lines run along the length of International Boulevard. Overhead transmission lines also are located along the east side of International Boulevard between S. 176th and S. 192nd Streets. Substations are located near S. 170th Street and International Boulevard and near S. 200th Street and 28th Avenue S. These transmission lines continue on the east side of 28th Avenue S., south of S. 192nd Street. The Port is currently completing construction of an electrical switchgear facility known as the North Main Substation; it is located on the west side of International Boulevard between S. 170th Street and S. 176th Street.

Puget Sound Energy also provides natural gas service in the project area. High-pressure gas lines are located along International Boulevard and 28th Avenue S. from S. 176th Street to S. 204th Street, with a crossing just north of S. 188th Street.

Qwest is the local telephone service provider. Other private companies (including AT&T, Electric Lightwave, MCI, and others) own fiber-optic cables and/or provide long-distance and other telecommunications services in SeaTac. Comcast provides cable television service to customers in SeaTac, and all cable television lines in the area are located underground.

The Highline Water District and King County Water District No. 125 supply drinking water to SeaTac. The Highline Water District generally serves the eastern and southern portions of SeaTac and the project area primarily from S. 160th Street to S. 200th Street. Highline receives the majority of its water supply directly from the City of Seattle. The airport system receives its water from the City of Seattle and provides water to the airport and its tenants. Major water mains are located on S. 160th Street (Seattle Public Utility's Cedar River Pipeline No. 4), along International Boulevard between S. 176th Street and S. 182nd Street, and on Port of Seattle property.

The Val-Vue and Midway sewer districts provide sanitary sewer service in the project area. The Midway Sewer District generally serves all of SeaTac south of S. 176th Street. The Midway Sewer District also receives all of the effluent from Sea-Tac Airport, which has a system that collects all of the sewage and then sends it down to Midway for treatment. Val-Vue serves the northeast area of SeaTac. Most sewage from the Val-Vue system ultimately flows into King County's regional collection and treatment system, but a small portion is handled and treated by the Midway Sewer District.

Sea-Tac Airport operates a utility tunnel beneath its main terminal to serve airport facilities. In addition, a jet fuel line leading to Sea-Tac Airport is located along International Boulevard between S. 170th Street and approximately S. 184th Street.

3.15.2 Impacts

3.15.2.1 No-Build

The No-Build alternative would not have long-term effects on existing utilities, although the S. 160th Street Loop Ramp project and other projects assumed in No-Build would involve relocation or temporary, short-term effects during their construction. Anticipated growth in the area would also increase demand on utilities.

3.15.2.2 Airport Link

The project may affect Puget Sound Energy's substations in the SeaTac area. Although Sound Transit does not anticipate displacement of these properties and facilities, the light rail route would cross above or near the North Substation at International Boulevard and S. 170th Street and the Port's North Main Substation. The proposed realignment of the northbound North Airport Expressway would go directly over the North Main Substation realigned roadway. To avoid this conflict, a bridge to span the substation is proposed. The light rail route also would travel near the substation located on 28th Avenue S. near S. 200th Street, but should not affect this facility. Any potential impacts to these facilities would be minimized through the design process and in coordination with Puget Sound Energy.

The water and sewer utility districts serving SeaTac, Puget Sound Energy, and several telecommunications companies have nearby service connections. All have adequate capacity to provide utility services to the proposed Airport Link light rail system. Sound Transit proposes to protect in-place the Seattle Public Utilities 60-inch water main at its interface with the proposed project. Sound Transit would coordinate the mitigation of structural load, settlement, and vibration with Seattle Public Utilities during the design phase.

Realignment of S. 170th Street would require the installation of a number of new utilities. Because the realigned roadway connects to existing grades at either end, no utilities impacts have been identified that cannot be addressed through the design process.

Throughout the light rail alignment and under the relocated roadways, existing underground gas, water, and sewer lines and other pipes and conduits beneath columns would be relocated or otherwise protected before or during construction (see Section 3.18.12), and would therefore not be affected by the weight of elevated segments, at-grade segments, or relocated roadways. It is possible that soil settlement due to elevated structure foundations may affect underground utilities. Vibration from Airport Link trains passing over relatively shallow utilities may also potentially damage those utilities. However, light rail design and construction procedures, relocation and protection policy, and other measures (such as monitoring of some deep utilities) would minimize the potential for impacts on these utilities. With input from utility owners and operators, the maximum allowable settlement for elevated and at-grade facilities would be determined and written into contractor specifications. In addition, case studies on vibration impacts and impacts to special utility infrastructure, such as lead joint pipes, would be analyzed to help determine appropriate protection of pipes during final design.

The design team would coordinate switchover/maintenance of service with affected utilities. In addition, utility agreements would address access during both construction and operation of the proposed light rail facilities.

Overall, impacts resulting from Airport Link would be similar to the impacts resulting from the original project. Airport Link may require greater coordination and design considerations to accommodate utilities than the original project because of the realignment of the northbound expressway at S. 170th Street and the concentration utilities in the vicinity of the Airport/SeaTac Station. With these measures, impacts to utilities and their users can be minimized.

3.15.3 Mitigation

Based on design measures and coordination with utility service providers, impacts to utilities during light rail operation would be minimal. Sound Transit would continue to work with utility providers to minimize any potential service interruptions and to conserve resources. The light rail project would include appropriate measures and would comply with applicable ordinances and procedures to prevent or minimize potential operational impacts for any proposed alternative on utilities. No adverse impacts on utilities during light rail operation would be expected.

3.16 HISTORIC AND ARCHAEOLOGICAL RESOURCES

3.16.1 Affected Environment

Section 106 of the National Historic Preservation Act of 1966, as amended, requires that federal agencies identify and assess the effects of federally assisted undertakings on historic resources, archaeological sites, and traditional cultural properties and to consult with others to find acceptable ways to avoid or mitigate adverse effects. Resources protected under Section 106 are those that are listed in or are eligible for listing in the National Register of Historic Places (NRHP). Eligible properties must be at least 50 years old, possess integrity of physical characteristics, and meet at least one of four criteria of significance. Regulations implementing Section 106 (36 CFR Part 800) encourage maximum coordination with the environmental review process required by NEPA and with other statutes, including Section 4(f). As required in the Section 106 review process, the area of potential effect was defined in the 1999 Central Link Final EIS in consultation with the State Historic Preservation Office. The area of potential effect remains the same for Airport Link and extends from 200 to 400 feet on either side of the alignment and from 800 to 1,000 feet around stations, depending upon the topography, existing environment, and system profile.

Historic sites are one of several resource categories protected under Section 4(f) of the Department of Transportation Act of 1966, as amended. Section 4(f) requires that the Secretary of Transportation not approve federally assisted transportation projects that may adversely affect protected resources unless (1) there is no feasible and prudent alternative, and (2) all possible planning has been done to minimize harm. The City of SeaTac encourages preservation of historic and archaeological sites through policies contained in their comprehensive plan but do not have an ordinance implementing a local landmark designation.

Angle Lake Elementary School, a property determined eligible for listing in the NRHP, is located at 19215 28th Avenue S., which is adjacent to the Airport Link route (in this area, Airport Link is the same as the original project). The Angle Lake School site is owned by the Highline School District, but was closed as a public school in 1975 and is currently leased for office space and community facility purposes. The 1999 Central Link Final EIS and technical report provide additional information, including one other historic resource: Belmont Farm/Hambach Family Compound. However, the historic buildings on this property were demolished in 1998.

One area of moderate probability for archaeological resources is located west of Bow Lake. However, no known archaeological sites are within or immediately adjacent to the Airport Link alternative.

3.16.2 Impacts

3.16.2.1 No-Build

The No-Build alternative would not impact Angle Lake Elementary School, the only historic and archaeological resource in the vicinity.

3.16.2.2 Airport Link

Airport Link and the related projects would not adversely affect any historic resources within the project's area of potential effect (APE), which was defined for Central Link as 200 to 400 feet of alignments, and 800 to 1,000 feet of stations. The elevated guideway on the east side of 28th Avenue S. south of S. 188th Street would not directly impact the school property or obstruct existing views of Angle Lake School, which are primarily from the north. Airport Link would not affect the attributes that contribute to the character of the historic property. The elevated guideway would be visible across 28th Avenue S. to the east. This stretch of 28th Avenue S. has been improved by widening and realignment, and given the other substantial changes in surrounding development, which had now become largely commercial, the change to the setting for Angle Lake School would be minor. The effects of Airport Link are the same as for the original project, and these effects were previously considered in the 1999 Central Link Final EIS.

Airport Link would pass through one area of moderate probability for archaeological resources west of Bow Lake. Impacts could occur if resources are present. The related roadway modifications for Airport Link have a low probability for impacting archeological resources because the area is predominately fill.

Neither Airport Link nor the original project would adversely affect historic resources. Archaeological resources could occur in one area west of Bow Lake, and the probability of encountering resources would be the same under either Airport Link or the original project.

3.16.3 Mitigation

No long-term impacts are anticipated. Construction activity mitigations are discussed in Section 3.18.

3.17 PARKLANDS

3.17.1 Affected Environment

The original project included an inventory of parks and other recreational facilities in the project area within 500 feet of the project corridor or within 0.25 mile of stations (Table 3.17-1). No parks or recreation facilities are located within this defined area for Airport Link. The parks or recreation facilities listed in the inventory for the original project are in the areas east of International Boulevard.

Table 3.17-1
Affected Environment Parkland Inventory for Original Project in Segment F

Identification Number and Name	Acreage	Facility/Features
Segment F (SeaTac)		
Angle Lake Park	10.5	Community beach park
Bow Lake (proposed improved public access)		Lake surrounded by private property
Flag Pavilion	0.25	Pocket park
SeaTac Office Center Park	0.25	Pocket park
Pedestrian/Bike Crossing of International Boulevard at S. 192nd Street (proposed)		

3.17.2 Impacts

No parklands would be affected under the No-Build alternative or the Airport Link alternative.

3.17.3 Mitigation

No mitigation is required.

3.18 CONSTRUCTION IMPACTS

This section discusses impacts that would result from construction activities and would typically end when construction is complete.

The current analysis for Airport Link is based on conceptual design and construction approach assumptions. Construction mitigation would be refined throughout project design and construction. The major construction activities that could cause environmental impacts include:

- Demolition (buildings, pavement) and removal of debris
- Fill and excavation
- Dewatering
- Utilities (relocations or service disruptions)
- Drainage changes
- Temporary construction stormwater detention and water quality facilities
- Temporary erosion and sediment controls
- Vegetation removal (temporary)
- Construction easements and staging areas
- Elevated structure construction
- Retaining wall construction
- Pile driving or drilling
- Temporary partial road or lane closures
- Temporary total road closures and reroutes
- Building temporary, new detour routes
- Delivery of materials and equipment, including concrete, fill, or preconstructed or precast materials, steel rails, and other system components
- Contractor storage and employee parking

The construction activities that have been analyzed are consistent with those previously discussed in the 1999 Central Link Final EIS, and they are intended to represent possible construction techniques and operations, truck routes, and staging schemes. The following discussion summarizes the assumptions used to define the construction sequence and activities.

Assumptions Regarding Construction Sequence and Activities

In addition to the general demolition, clearing, and construction activities listed above, the following activities would occur under the Airport Link project:

- Construct light rail with elevated, at-grade, and retained fill structures.
- Construct elevated station, pedestrian bridge, kiss-and-ride, and entrance structures near S. 176th Street.

- Construct a park-and-ride southern terminus station at S. 200th Street.
- Realign the airport access roadways and S. 170th Street.
- Relocate the driveway to Washington Memorial Park Cemetery.
- Relocate the northbound expressway east of its current position and replace and widen the existing exit ramp to S. 170th Street with a new realigned exit.
- Relocate the main terminal parking garage north entrance and exit ramps, and remove the rental car return-to-terminal ramps and the upper and lower drive return-to-terminal ramps.

Construction Sequencing

Linear projects such as light rail and roadway realignment are typically built in several sections. The approach for light rail construction was discussed in the 1999 Central Link Final EIS. Airport Link's construction approach is expected to remain similar to the 1999 Central Link Final EIS characterization, although it involves additional elements related to the roadway components described above.

Sound Transit and the Port of Seattle have developed an initial construction and phasing plan for the Airport Link light rail and roadway elements. The construction of the revisions to the North Airport Expressway, S. 170th Street, parking garage access drives, and the construction of Airport Link light rail guideways and stations would be conducted in a coordinated sequence that would maintain traffic flow to the airport and adjacent uses.

The initial phases of construction work for both the roadway and light rail elements of the project would involve demolition/clearing and rerouting of utilities. In some areas, as identified in Section 4.1, it would be necessary to demolish existing buildings or structures prior to starting construction of light rail facilities and the roadway revisions. The demolition of existing facilities and development of replacement roadway sections would typically be addressed first, followed by the construction of the light rail facilities. Demolition would involve implementing stormwater and erosion control measures; tearing down buildings and structures; demolition of bridges and pavement; relocating utilities; removing debris; and identification, special handling, and containment if necessary for disposal of hazardous materials. Demolished structures could potentially contain asbestos material, lead paint, or other regulated materials. There may also be underground storage tanks associated with some structures, thus increasing the risk of potential soil contamination. All regulatory requirements for asbestos removal, soil testing, fuel tank removal, structure demolition, utility abandonment, and removal and disposal of hazardous materials would be followed during the demolition phase. Demolition work would create noise and dust and truck traffic associated with debris removal.

Segments of the route consisting of at-grade tracks or tracks on retained fill structures would require the demolition/clearing and related activities discussed above, followed by grading and shallow excavations. This would also occur with the roadway elements. During grading, contractors would install culverts or other permanent drainage features and below-grade light rail infrastructure. Subgrade and track sections would be constructed, and overhead catenary support poles would be placed.

Typical construction for elevated structures allows activities to be more intermittent in a given location, avoiding the longer and more continuous construction activities that would occur with surface and retained cut track sections. For instance, foundations and columns may be constructed over a 4- to 6-week period within a particular area. Where precast structures are used, 1 to 2 weeks will be required for erection of the guideway structure through a local area. Cast in place structures may require longer durations of 6 to 8 weeks to complete in a given location. The construction of structures will be followed by secondary construction activities in preparation for trackwork installation. Many other construction activities can be completed on the guideway structure, and surface activity would be limited to truck traffic. A lengthier description of typical elevated section construction activities is provided in the 1999 Central Link Final EIS.

Construction activities would occur primarily between the hours of 7:00 AM and 10:00 PM, but in some cases may occur outside of these hours. Construction noise levels would be expected to comply with noise ordinance limitations, but may occasionally exceed noise criteria during certain activities. In addition, to reduce the overall construction duration, impacts, and costs, there may be a need to perform some activities outside of these hours. Sound Transit expects to seek a noise variance that would specify allowable exceedances and limitations. Construction variances and permits would go through the City of SeaTac review and approval process. Truck hauling would typically occur between the hours of 8:00 AM and 8:00 PM. Truck haul routes would be approved by local jurisdictions. In emergencies or situations with unique project constraints, occasional hauling may occur outside these hours. For Airport Link, the primary haul routes in the area remain similar to those assumed for the original project. They include the North Airport Expressways, SR 518, International Boulevard, S. 188th Street, S. 200th Street, S. 28th Street, N. and S. Air Cargo Roads, S. 160th Street, and S. 170th Street.

As noted above, access to the airport would be maintained at all times. In other locations off of the airport property, access to existing businesses and residences would also be maintained at all times during construction. Vehicle deliveries to businesses would be maintained via existing or alternate routes.

Although project construction and testing may last up to 4 years, the most intensive construction activities would be shorter. The duration of heavy civil construction in front of any particular property would typically not exceed 6 to 12 months, with some exceptions, such as within the airport property, near stations, or where demolition and construction activity is substantial. In these areas, the heavy civil work would be completed in 1 to 2 years, followed by less disruptive installation of systems and architectural components.

Airport Link could be built in two phases (first to the Airport/SeaTac Station and then to the S. 200th Station). Although the overall duration of construction for a two-phased sequence could be higher, the level of impacts are expected to be within the ranges described below by environmental area.

Construction Staging Areas

Another element in the initial construction sequence is the development of staging areas. Staging areas are needed in advance of all construction work. For Airport Link, at-grade, elevated, and retained cut-and-fill light rail sections and associated roadways would have construction staging areas all along the route. Contractors would generally use the property in which the facility is being constructed as the staging area, but other staging areas may be needed. For example, potential construction staging areas that may be used include the SR 518 right-of-way, the Radisson Hotel and adjacent old Bank of America sites, Port property, and the AJAX property at S. 154th Street west of International Boulevard.

3.18.1 Transportation

Construction impacts for Airport Link are similar to those discussed for the original project in the 1999 Central Link Final EIS. Construction of the Airport Link alternative would result in temporary impacts to local and regional automobile and truck traffic, including temporary lane closures and traffic detours.

In general, construction staging areas for the at-grade and elevated structures would be located in the right-of-way of SR 518 on Port property along the route and on other properties to be acquired. Contractor storage and parking would also be accommodated on other property parcels, typically under lease arrangements. Approximately 2,100 truck trips would be needed to remove spoils and bring in materials for Airport Link over the 3-year construction period, which is similar to quantities estimated as the original project. Truck trips would typically avoid peak travel periods, but daily volumes would typically be below 100 trucks per day, or within 10 to 20 trucks per hour.

Like the original project, traffic impacts identified for much of the construction activity associated with Airport Link would occur on principal arterials. Table 3.18-1 summarizes these traffic impacts and notes the primary haul routes that use roadways around the airport. Access to businesses, residences, and the airport would be maintained at all times. Delay impacts may occur during construction of elevated and at-grade

sections of the light-rail line as well as stations. The revisions to the airport circulation roadways would require temporary roadways, lane closures, and minor detours. These impacts would consist of increases in delay due to temporary lane restrictions.

Table 3.18-1
Construction Impact Summary of Airport Link Alternative

Location	Street Characteristics	Haul Route/ Construction Truck Traffic Use ¹	Road Closure ²	Detour of Traffic		On-Street Parking Loss ⁴
				Detour Route Available	Neighborhood Traffic Intrusion ³	
28th Avenue S.	Principal Arterial	High	Partial, significant	Yes	Low	None
S. 170th Street	Minor Arterial	High	Full short term, partial, significant	Yes	Low	None
S. 188th Street	Principal Arterial	High	Partial, significant	Yes	Low	None
S. 200th Street	Principal Arterial	High	Partial, significant	Yes	Low	None
North Airport Expressway	Access Freeway	High	Partial, significant	Yes	Low	None
International Boulevard	Principal Arterial	High	Partial lane, significant	Yes	Low	None
SR 518	Freeway	High	Full-short term, off-peak	Yes	Low	None

- Notes: ¹ High truck traffic is associated with major fill, excavation, and concrete work.
- ² Road closure significance is directly related to the street classification, level of traffic affected, and existing levels of service. Closures with system-wide effects would be significant.
- ³ Potential for neighborhood traffic intrusion is characterized as either high, medium, or low impact and is related to both potential road closure and options for traffic detour.
- ⁴ Parking loss is characterized as “yes” for parking loss and “none” for no loss. Some off-street parking might be lost due to location and operation of construction staging.

International Boulevard would experience high levels of truck traffic throughout construction of either the original project or Airport Link. For the construction of the pedestrian bridge overpass and the relocation of portions of the North Airport Expressway, partial, short-term lane closures may be required. Traffic control at nearby major intersections would likely be required.

SR 518 would experience high levels of truck traffic for the original project or Airport Link, and the construction of overhead structures would require partial to full short-term closures. Traffic control on detour routes and regional freeway and airport access notices would be needed.

The northbound expressway would also experience high levels of truck traffic, including from trucks entering or leaving the roadway to reach adjacent sections of the revised roadway or the Airport Link project. Similarly, S. 170th Street would experience high levels of truck traffic. Partial lane closures would be required, and temporary roads may also be used. Traffic would be maintained at all times. The construction of bridges and other facilities above an active roadway may also require a temporary full closure, but most closures would be performed in off-peak periods.

On 28th Avenue S., Airport Link would require traffic control measures to maintain access to properties during construction. Truck traffic would likely be high for removal of excavation spoils, delivery of materials, and erection of elevated trackway.

The Airport Link alternative would cause short-term partial closures of S. 188th Street and S. 200th Street but would be restricted to off-peak hours to maintain access to I-5, businesses, and residential properties. The park-and-ride site at S. 200th Street would likely provide a construction staging area.

3.18.1.1 Mitigation

Construction impact avoidance measures would be incorporated within the project, and Sound Transit will comply with local regulations governing construction traffic control and construction truck routing. Sound Transit would finalize detailed construction plans in close coordination with the Port of Seattle, local jurisdictions, WSDOT, King County Metro Transit, and other affected agencies and organizations. Typical actions to minimize impacts during construction would include the following:

- Coordinate with King County Metro Transit to minimize construction impacts and disruptions to bus facilities and service. Post informative signage well before construction at existing transit stops that would be affected by construction activities.
- Follow standard construction safety measures, such as installation of advance warning signs, highly visible construction barriers, and the use of flaggers.
- Post advance notice signs prior to construction in areas where surface construction activities would affect access to surrounding businesses.
- Coordinate street sweeping services in construction areas with construction activity, particularly areas with surrounding residential and retail development.
- Use lighted or reflective signage to direct drivers to truck haul routes to ensure visibility during nighttime work hours.
- Use temporary reflective truck prohibition signs on streets with a high likelihood of cut-through truck traffic.
- Cover trenches during non-construction hours where possible, and use precast concrete barriers to protect drivers.
- Develop a multimedia public information program (e.g., print, radio, posted signs, and electronic Webpage) to provide information regarding street closures, hours of construction, business access, and parking impacts.
- Provide construction workers designated parking on- or off-site, as possible, to minimize neighborhood parking impacts.
- Provide temporary parking to mitigate loss due to construction staging or work activities, as appropriate.

The adverse transportation impacts that would occur during construction are temporary lane or roadway closures during peak hours, temporary increase in truck traffic, and temporary loss of parking in some construction staging areas. Mitigation measures to minimize or mitigate these impacts would be to schedule traffic lane closures and high volumes of construction truck traffic during off-peak hours to minimize delays during periods of higher traffic volumes as much as possible.

3.18.2 Land Use, Economics, and Neighborhoods

Construction impacts to land use, economics, and neighborhoods could include increased noise, vibration, dust, traffic, parking loss, and adverse visual quality. Land use character or economic activity can be impacted by activities that temporarily change the land use as well as impacts of actual or perceived change in access, visibility, convenience, or parking. In the case of Airport Link, construction would not result in a permanent adverse effect on land use, economic activity, or neighborhood character, because

Airport Link and the associated airport road realignments would be on public land, including airport, freeway, or street rights-of-way.

For the sections of the Airport Link along International Boulevard and 28th Avenue S., several residential (near S. 200th Street) and hotel properties (see Figure 3.2-1 for hotel locations) would experience the typical construction activities discussed above and related noise, vibration, truck traffic, congestion, dust, and light and glare. The light rail in this area would be elevated, which would allow a sequential construction approach and would reduce the intensity and duration of construction. This approach also reduces the amount of work that would be conducted on the ground and allows areas to return to conditions similar to normal during periods of inactivity. Coordination would occur between Sound Transit, SeaTac, the Port, and the affected businesses during construction activities in order to minimize impacts.

The Airport Link project is similar to the original project in that the stations would be west of International Boulevard and thus have minimal interference with land use and economic activities. Since neighborhoods are avoided, and there are a limited number of residences within 200 feet of the construction areas, construction impacts are minimized for the most sensitive land uses. The sections of the project along 28th Avenue S. are the same as the original project, although development has continued in the area. As noted in Noise and Vibration (Section 3.18.1.5) below, up to five residences and a hotel use in this area could be affected during construction.

As a standard measure for construction for all elements of Central Link, including Airport Link, Sound Transit will develop and implement a construction outreach plan that will provide that local residents and businesses are fully informed about potentially major disruptions such as temporary street closures; out of the ordinary construction noise, vibration, light, or glare; changes in transit service; and parking availability.

3.18.2.1 Mitigation

The following measures would be considered to mitigate localized land use impacts that may occur to properties immediately adjacent to construction areas:

- Minimize construction-related noise, vibration, dust, and dirt impacts through appropriate construction scheduling methods, particularly to minimize impacts during periods of increased sensitivity, such as evenings for residences and hotels.
- Provide business cleaning services on a case-by-case basis.
- Provide a project-specific 24-hour hotline monitoring center that provides telephone access for the public to get construction information and to make complaint and incident reports. (A hotline is already in place for the Initial Segment's construction.)
- Displacements due to construction are included in the property acquisition, displacement, and relocation impacts provided in Section 3.3. Although compensation for property and relocation assistance would be provided, relocation could still represent inconvenience or hardship.

3.18.3 Visual Resources and Aesthetics

The effects to visual resources potentially caused by the construction of Airport Link would not substantially differ from those caused by the original project. Differences would be mainly north of S. 170th Street, where the proposed Airport Link would be constructed in the median of the North Airport Expressway instead of along the west side of Washington Memorial Park Cemetery. As with the original project, the construction of the Airport Link project would involve increased clutter, demolition, clearing, and other changes to existing visual elements. Light, glare, construction equipment, materials, signage, and staging areas would also temporarily reduce the visual quality in the immediate area.

3.18.3.1 Mitigation

To minimize impacts, the project would incorporate measures such as shielding light sources to block direct views from residential areas and aiming and shielding to reduce spillover lighting in such areas. Other measures to minimize impacts were noted in the long-term visual impact analysis in Section 3.5. This includes removal of trees and buildings and the introduction of new temporary visual elements.

3.18.4 Air Quality

Construction activities primarily generate particulate matter (PM₁₀ and PM_{2.5}), as well as small amounts of CO, VOCs, and NO_x from construction machinery exhaust and vehicular traffic delayed in construction zones. Specific sources of particulate matter include dust from earth-moving excavation activities (termed fugitive dust) and diesel smoke.

Dust from construction activities would occur with either Airport Link or the original project. Ground surface disturbance and rail line installation would generate dust along the entire length of the project. In addition, concrete and asphalt demolition activities would create dust.

Airport Link and the original project have the potential for temporary impacts from construction, including exhaust from construction vehicles and equipment and odors created during paving of station areas, parking areas, and roads.

3.18.4.1 Mitigation

The Puget Sound Clean Air Agency enforces air quality regulations in King County, including those for controlling fugitive dust (Regulation 1, Section 9.15). Contractors engaged in construction activities must comply with this regulation, which requires the use of best available control technology to control fugitive dust emissions. In addition, Sound Transit's standard construction specifications address fugitive dust controls.

Standard controls used to meet air quality standards may require the following actions:

- Use water spray as necessary to prevent visible dust emissions—particularly during demolition of brick or concrete buildings by mechanical or explosive methods.
- Minimize dust emissions during transport of fill material or soil by wetting down, by covering loads, and other measures.
- Promptly clean up spills of transported material on public roads by frequent use of a street sweeper machine.
- Cover materials, debris, and soil.
- Keep all construction machinery engines in good mechanical condition to minimize exhaust emissions.
- Route and schedule high volumes of construction trucks to reduce delays to traffic during peak travel times as practical to reduce air quality impacts caused by a reduction in traffic speeds.

These standard measures would avoid significant construction-related air quality impacts. Where businesses with unusually high air quality requirements are located adjacent to high dust-generating construction activities, additional mitigation may be required. Potential measures include more frequent cleaning or replacement of the building's air conditioning system filters or more frequent exterior dust and particulate control measures.

Neither the Airport Link alternative nor the original project would adversely affect air quality resources from the effects of construction.

3.18.5 Noise and Vibration

3.18.5.1 Construction Noise

The Washington State Noise Control Ordinance defines three classes of property use and the maximum noise levels allowable between them. This state ordinance, which been adopted by the Cities of Tukwila and SeaTac, is applicable to project modifications such as general construction activities, park-and-rides, and maintenance facilities. The Washington State Noise Ordinance is summarized in Table 3.18-2.

Table 3.18-2
Washington State Administrative Code Noise Ordinance
(Also used by the City of SeaTac and City of Tukwila)

Property Usage on Noise Source	Maximum Allowable Sound Level, dBA at Receiving Property		
	Residential	Commercial	Industrial
Residential	55	57	60
Commercial	57	60	65
Industrial	60	65	70

As with the original project, major noise sources associated with Airport Link construction would include haul trucks, loaders, cranes, and excavators (Table 3.18-3). Other noise-producing construction sources include compressors, conveyors, backhoes, generators, fans and blowers, and light duty vehicles. Noise levels at the nearest noise-sensitive receivers are projected to be as high as 90 dBA during peak construction hours, which is typical for construction projects of this magnitude.

Table 3.18-3
Typical Construction Equipment Noise Levels

Equipment	Typical Maximum Level in dBA
Generators	81
Backhoes	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Crane (large)	88
Crane (small)	82
Dozer	85
Loader	88
Pile Driver	101
Truck (haul type)	88

Source: FTA Transit Noise and Vibration Assessment Manual, April 1995, and measured noise level from the Portland Light Rail construction project 1993 – 1997.

Noise from impact equipment, as measured at the property line or at 50 feet from the equipment, whichever is greater, may exceed the limits given above in any 1-hour period between the hours of 8:00 AM and 5:00 PM on weekdays and 9:00 AM and 5:00 PM on weekends. However, noise levels are not normally allowed to exceed the following limits shown in Table 3.18-4.

Construction noise could be a disturbance to apartments near SR 518, five single-family residences located along 28th Avenue S. just south of S. 192nd Street, and to the single-family residences near S. 200th Street. In addition, there are hotels and commercial businesses in the southern section of Airport Link, primarily along 28th Avenue S., that may also experience high noise levels during project construction. While this section is elevated and the intensity of construction would be intermittent, activities such as demolition and excavation would produce noise. Trucks and other construction equipment listed above would also be operating in close proximity. However, the most intensive techniques, such as pile driving, would be avoided when in close proximity to sensitive land uses, and auguring techniques or other methods would be used to minimize noise where possible.

**Table 3.18-4
Exemptions for Sound Level Exceedances**

Maximum Hourly L_{eq}	Allowable Time for Sound Level Exceedance
90 dBA	Continuously
93 dBA	30 Minutes
96 dBA	15 Minutes
99 dBA	7.5 Minutes

In other areas, such as roadway and structure construction tasks on the airport property and to the north to S. 154th Street, construction would be further away from residences or other sensitive uses, and noise impacts would be minimal.

Construction activities associated with stations, park-and-rides, and ancillary and support facilities would be short-term and have minimal noise impacts. Mitigation measures given below should be sufficient to mitigate potential impacts for construction of these facilities.

In some locations, most likely for the segments within the airport, nighttime construction activities would be necessary to minimize traffic impacts. After 10:00 PM and before 7:00 AM, noise levels would be limited. If specific construction activities exceeding nighttime noise regulations are needed, Sound Transit would request a variance from the City.

Ground-borne vibration from construction activities can sometimes also produce ground-borne noise. Ground-borne noise is a rumbling sound caused by the vibration of room surfaces. The relationship between the level of ground-borne vibration and the noise it may produce depends on the frequency content of the vibration source, stiffness of the soil, and the acoustical properties of the receiving room. Typical human perception of ground-borne noise occurs at approximately 70 VdB, which equates to an interior noise level of approximately 40 dBA for average soil conditions. Construction activities in stiffer clay soils or rock have the potential to produce noise levels of 45 dBA with vibration levels of 65 VdB. The actual level of ground-borne noise will depend on the frequency of vibration, geological strata between the vibration source and receiver, and acoustical conditions of the receiving structure. Because Airport Link would be elevated near the most sensitive land uses, the potential for ground-borne noise would be considered low, and the exposure would be intermittent.

3.18.5.2 Noise Mitigation

Several methods to minimize noise impacts are available for the contractor to use when necessary. Operation of construction equipment should, where feasible, be limited near occupied dwellings at night (10:00 PM to 7:00 AM) or on Sundays or legal holidays when noise and vibration would have the most severe effect. Noise barriers could be used in some locations, particularly around noise-generating equipment. All engine-powered equipment would be required to have mufflers installed according to the manufacturer's specifications, and all equipment would be required to comply with pertinent equipment

noise standards of the U.S. EPA. In areas with sensitive receptors nearby, Sound Transit would seek to limit activities that produce the highest noise levels, such as hauling, jack hammering, and the use of other demolition equipment, to daytime hours of 8:00 AM to 5:00 PM or when disturbance to sensitive receivers would be minimized. As practical, Sound Transit would schedule construction activities in an effort to limit impacts on residences and local area businesses and seek to avoid the most intensive techniques where possible. If specific construction activities exceeding nighttime noise regulations are needed, Sound Transit would request a variance from the City.

3.18.5.3 Construction Vibration

Major vibration-producing equipment includes soil compactors, bulldozers, excavation equipment, hoe-rams, jack hammers, and haul trucks. Construction activities may cause high levels of vibration due to demolition and soil compacting. Structural damage to buildings is not anticipated. In some locations, primarily along 28th Avenue S., vibrations would be perceptible to occupants, but would not be of a magnitude that would disrupt typical business activities in the immediate vicinity.

3.18.5.4 Vibration Mitigation

Mitigation of construction vibration is difficult to accomplish, and therefore, a strict monitoring program is normally used for projects of this magnitude to avoid impacts. The construction contract specifications would contain a section specific to vibration, and include, at a minimum, vibration monitoring of all activities that may produce vibration levels at or above 0.5 inches-per-second whenever there are structures or sensitive equipment located within 50 feet of the most intensive vibration-producing construction activity. In these locations, alternative construction approaches would be considered to minimize vibration.

3.18.6 Ecosystems

Construction activities would remove vegetation along roadways and on properties to be acquired for the Airport Link guideways, stations, and associated roadway improvements. However, no streams, wetlands, or other fish and wildlife habitat would be affected. The primary concern for ecosystems is related to the potential for stormwater impacts and erosion during construction, which is discussed below.

3.18.6.1 Mitigation

Managing stormwater in accordance with applicable regulations would avoid ecosystem impacts, and no additional mitigation would be necessary.

3.18.7 Water Resources

Construction of Airport Link and the associated roadways is not expected to have major impacts to hydrology, water quality, or floodplains. Generally, construction-related water quality impacts would be temporary and caused mainly by erosion of disturbed soil areas or soil stockpiles resulting in silt and sediment transport to water by stormwater runoff. Stormwater runoff may also carry other contaminants such as fuel or oil from construction operations. Sediment and other contaminants can increase turbidity. Construction activities such as clearing and grading can also result in increased stormwater runoff velocities. Increased velocities may increase erosion rates and destabilize streambanks.

Project construction activities would be required to meet the requirements of all applicable federal, state and local rules, regulations and permits. A National Pollutant Discharge Elimination System (NPDES) stormwater permit for construction activities would be required. Construction activities associated with Airport Link that occur on Port property may be subject to the Port's NPDES permit. The NPDES permit would require preparation of a stormwater pollution prevention plan that meets the requirements of the Port's permit. The objective of a stormwater pollution prevention plan for construction phases of a project is to implement best management practices (BMPs) to minimize erosion and sedimentation; reduce, eliminate, or prevent the pollution of stormwater; prevent violations of surface water quality, or sediment management

standards; prevent adverse water quality impacts on beneficial uses of the receiving water body; and eliminate discharges of unpermitted process wastewater to stormwater or waters of the state.

3.18.7.1 Mitigation

Water quality degradation resulting from erosion and sedimentation and the release of pollutants during construction would be minimized through the use of BMPs. Managing stormwater and the use of BMPs in accordance with applicable rules, regulations, and permits would avoid impacts, and no additional mitigation would be necessary.

3.18.8 Energy

Airport Link would have only minor differences from the original project's energy usage, which remains within the range of effects analyzed in the 1999 Central Link Final EIS and is not considered likely to adversely impact regional energy supply. No mitigation would be necessary.

3.18.9 Geology and Soils

Constructing the light rail system could cause erosion impacts associated with vegetation removal, fill placement, and removal or stockpiling of spoils. Earthwork could cause silt-laden runoff to be transported off-site, thereby degrading water quality in local surface waters. The severity of potential erosion would be a function of the quantity of vegetation removed, site topography, and the volume of soils stockpiled. Vibrations or settlements may result in damage to nearby structures due to excavations that encounter bedrock or installation of driven piles. However, as noted under vibration above, impact pile driving would be avoided where possible for segments in close proximity to buildings susceptible to settlement or vibration damage. Lower impact techniques such as auger pile driving or auger piles would be considered, typically when sensitive receptors are closer than 50 feet. The Airport Link would require earthwork, although not in areas mapped as seismic hazards or soils susceptible to erosion, and no short-term or long-term impacts to the project area are anticipated. Under Airport Link, moderate erosion potential could occur due to removing vegetation from the roadway median.

3.18.9.1 Vibration Mitigation

No mitigation is required. Construction approaches to minimize vibration impacts to buildings are discussed in Section 3.18.5.4.

3.18.10 Hazardous Materials

As with the original project, potential hazardous materials impacts could be largely beneficial, because some existing contaminated sites would be cleaned up during project construction. However, adverse impacts can occur if cleanup activities expose workers or the public to contaminated soil and groundwater or if construction dewatering causes contamination within groundwater to migrate.

Cleanup efforts during construction could include removal of contaminated soil and/or groundwater. Contaminated soil typically would be transported from the construction area for further accumulation, treatment, or disposal. Occasionally, soils are stockpiled so that they may be characterized for disposal, but they may also be transported off-site for characterization and disposal.

A hazardous material release to groundwater can spread beyond property boundaries. Construction dewatering associated with retained cut-and-fill or installing structural supports for elevated sections may facilitate contaminant transport into the construction area.

Sites having documented hazardous material releases to soil or groundwater that are on or close to the route were considered to have the most likely potential construction impact, and other sites of concern may be on or near the alignment. Specific sites were identified in Section 3.12.

A formalized health and safety plan and a contaminated soil and materials handling plan would be required before construction work begins. Typically, the plan would include procedures for handling abandoned underground storage tanks that may be encountered during construction. Public health and safety measures would be implemented to minimize exposure through both airborne and direct contact routes. Increased setbacks, additional barriers to public access, and expeditious removal of contaminated materials may be required to limit contact by the public, particularly when materials are close to areas frequented by people or when contamination levels are high. The health and safety plan would also identify measures to ensure construction worker safety, outline emergency medical procedures, and specify reporting requirements.

The contaminated materials handling plan would specify methods and procedures for stockpiling, transportation, disposal, and treatment of contaminated soil, as well as groundwater removal, storage, treatment, discharge (to sewer), transportation, and disposal. Cleanup efforts would be implemented during construction to reduce potential long-term impacts (e.g., cut-off walls, or vapor extraction or systems to limit contaminated groundwater migration). Most encounters with hazardous materials are expected to involve petroleum products that can be managed using relatively standardized approaches.

Throughout the construction process, encounters with hazardous materials would be documented and reported in accordance with applicable law. Project planning would accommodate regulatory agency requirements as well as disposal or treatment facility requirements.

3.18.10.1 Mitigation

With a health and safety plan described above, and the appropriate handling of contaminated materials in accordance with applicable law, no additional mitigation would be required.

3.18.11 Public Services

Construction impacts to fire and emergency medical services, law enforcement, school bus service, and solid waste disposal and collection resulting from the proposed project would be essentially the same as identified for the original project, which included potential delays to response times due to congestion and detours and the potential for construction activities to result in injuries or other incidents requiring police, fire, or other emergency response.

3.18.11.1 Mitigation

The Port of Seattle and Sound Transit will require contractors to notify fire, police, and emergency medical services to provide advance notice of construction plans, traffic detours, and road closures. Sound Transit will also continue to work with the City of SeaTac through the Fire/Life Safety Committee to ensure that reliable emergency access is maintained and alternate plans or routes are developed to avoid significant delays in response times. Sound Transit will also coordinate with the fire department during water and other utility relocations to prevent supply disruptions.

3.18.12 Utilities

Impacts resulting from Airport Link would be similar to the impacts resulting from the original project and are discussed by location of the utilities in Section 3.15. Airport Link may require greater coordination and design considerations to accommodate utilities than the original project because of the realignment of and overcrossing at S. 170th Street and the concentration of utilities in the vicinity of the Airport/SeaTac Station.

As described in the original project, utility pipes, lines, conduits, cables, and other infrastructure would need to be supported in place, relocated, or otherwise avoided during construction. The water and sewer utility districts serving SeaTac, Puget Sound Energy, US West, and several telecommunications companies have nearby service connections. Disruptions to utility service during utility relocations would likely be minimal, because temporary connections to customers would typically be established before relocating utility conveyances. However, inadvertent damage to underground utilities can occur during construction if utility

locations are uncertain or misidentified. While such incidents do not occur frequently, the numerous relocations required during light rail construction under any alternative make accidents more likely. Such accidents could temporarily affect service to utility customers. Potential impacts to utilities are based on an examination of available utility maps, discussions with utility representatives, and field visits and may not completely or precisely assess all existing utilities. Precise locations and depths of utilities would be verified in later design stages and prior to construction of the light rail facilities.

Realignment of the North Airport Expressway, S. 170th Street, and nearby roadways would require the installation of a number of new utilities. Because the realigned roadways connect to existing grades at either end, no utilities impacts have been identified that cannot be addressed through the design process.

The Airport/SeaTac Station is located in an area that has a number of existing utilities. Of particular note are the large underground ducts associated with the North Main Substation. Construction techniques and placement of the supports would make it possible to accommodate much of the existing utility infrastructure.

Throughout the alignment, existing underground gas, water, sewer lines, and other pipes and conduits beneath columns would be relocated or otherwise protected before or during construction. Therefore, the utilities would not be affected by the weight of elevated segments.

3.18.12.1 Mitigation

Sound Transit will repair or replace utilities inadvertently damaged during construction. With the other coordination, replacement, and relocation measures identified in Section 3.15, no additional mitigation would be required.

3.18.13 Historic and Archaeological Resources

Neither the Airport Link alternative nor the original project would be expected to adversely affect historic resources during construction. Airport Link and the original project would pass through one area of moderate probability for archaeological resources west of Bow Lake. Impacts could occur if resources are present.

3.18.13.1 Mitigation

Mitigation measures to lessen potential harmful impacts from construction at presently undetected archaeological sites include subsurface testing before construction and monitoring during construction. Mitigation measures for paleontological finds would consist of salvage during construction. Airport Link will follow the procedures identified in the Central Link Light Rail Project Programmatic Agreement, which includes preparation of an archaeological resources treatment and monitoring plan.

3.18.14 Parklands

Construction impacts to parklands would not occur under either the original project or the Airport Link alternative. No parklands are located along the Airport Link corridor.

3.19 CUMULATIVE EFFECTS

Cumulative effects are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR S1508.7). The process of analyzing cumulative effects is considered throughout the Airport Link environmental review, including the identification of the affected environment, development of alternatives, and evaluating environmental impacts.

This EA’s descriptions of the affected environment reflect both past and present actions. They include the effects of historic actions (such as major changes in watersheds, land use patterns, and travel patterns), as well as more recent actions (such as revisions to International Boulevard in SeaTac). Aerial photographs (historic

and recent), historic mapping, geographic information systems, field reconnaissance, and other techniques were used to identify the existing conditions resulting from past and present actions.

One key challenge in evaluating cumulative environmental effects is identifying the reasonably foreseeable future actions that would be taken by other agencies and persons. This EA incorporates the effects of such future actions in a number of ways, including the following:

- Population and employment projections are based on PSRC's model, which projects future land use pattern changes at the local and regional levels.
- Future traffic volumes, vehicle miles traveled, ridership, and travel times are based on projections of future land use patterns, population and employment growth, programmed future transportation improvements, and known land use development projects.

Many of the environmental analyses in the preceding sections already reflect future forecasts and projections. These include traffic and transit (Section 3.1), air quality (Section 3.6), energy (Section 3.10), land use and economics (including population and employment) (Section 3.2), and traffic noise (Section 3.7).

The major future developments immediately within the project area include specific programmed transportation improvements, as well as land use projects that are known. Transportation and other public works projects often involve longer public planning processes, and it is not unusual for projects to be identified as much as 20 years into the future. By contrast, specific land use projects are more often the result of private planning and investment. They are not centrally planned, coordinated, and funded, and, until local permit applications are submitted, these private plans may not be available for public review. Therefore, the cumulative analysis for land use also considers comprehensive plans and forecasted growth in population and employment, as well as densities anticipated through planning designations and zoning.

The following projects were identified in the project area for the No-Build and Airport Link alternatives.

Port of Seattle S. 160th Street Loop Ramp Project

The Port of Seattle's S. 160th Street Loop Ramp project is described as part of the No-Build alternative in Chapter 2.

In the event that the Port of Seattle elects not to undertake this project, to alleviate airport congestion issues and provide a return-to-terminal facility, Sound Transit would work with the Port to devise an alternate means of constructing the Airport/SeaTac Station or replacing the function of the existing return-to-terminal ramps. In this case, Sound Transit would conduct any required environmental review pursuant to NEPA and SEPA as appropriate. Construction of Airport Link would not occur until appropriate environmental review of the mitigation was conducted, including an affirmative finding by FAA on changes to the Airport Layout Plan.

Port of Seattle Airport Remote Consolidated Rental Car Facility

The Port of Seattle's RCF is described as part of the No-Build alternative in Chapter 2.

WSDOT SR 518/SR 99 Interchange Improvements and Widening of SR 518

WSDOT is preparing EAs for two SR 518 projects, which include:

- Adding a third lane on eastbound SR 518 from the North Airport Expressway/SR 99 interchange to the I-5/I-405 interchange.
- Making safety improvements to the SR 509/SR 518 interchange in Burien by adding a freeway to freeway connection for the southbound SR 509 to eastbound SR 518 movement. Due to the high rate of accidents at the SR 509/SR 518 interchange, WSDOT is also looking at implementing traffic calming and gateway design concepts as well as context sensitive design/solutions.

Partial funding for environmental and design work has been made available and substantial funding for construction was approved in spring 2005. Design charrettes for the projects and scoping for the EAs occurred in January 2005. WSDOT expects the construction for the third lane to start in the summer of 2007 and be completed by late 2008.

Potential impacts of the SR 518 widening project would be to wetlands in the WSDOT right-of-way and include minor partial and total property acquisition in order to provide wetland mitigation and stormwater detention facilities. Impacts of the SR 509/SR 518 interchange projects may include partial and total acquisition of some properties near the immediate proposed ramp for this interchange.

WSDOT I-5/S. 188th Street Interchange Unstable Slope (SeaTac)

This project will address slope instability, reduce settlements, and potentially replace a retaining wall. The project also would replace pavement and underlying material in sub-grade, install horizontal drains, and repair existing erosion channels. Construction is expected to begin in the summer of 2009.

WSDOT I-5/SR 509 Freight and Congestion Relief Projects

This project would connect SR 509 at S. 188th Street in SeaTac to I-5 near S. 211th Street. The extension would have six lanes, with two general use lanes and one HOV lane in each direction. Extending SR 509 would ease congestion on I-5; improve service to the industrial district by allowing up to 9,000 trucks per day to bypass I-5, SR 99, and local streets; and provide a southern access to Sea-Tac Airport. Construction is expected to begin in 2005 or 2006 (WSDOT 2004b).

Master Park Expansion of Park-and-Fly Lot

Master Park plans to expand the park-and-fly lot (Lot C) south of S. 160th Street, which would provide an additional 800 to 1,100 parking spaces. The site is currently partially wooded, has a wetland, and also has a gravel area that was previously used for a park-and-fly operation (Dodge 2004).

Port of Seattle Third Runway

The Port of Seattle is constructing a third parallel runway to, “Improve the poor weather airfield operating capability in a manner that accommodates aircraft activity with an acceptable level of aircraft delay” (FAA and Port of Seattle 2004). When there are low clouds (about 44 percent of the time), Sea-Tac Airport can use only one of its two existing runways for arrivals, resulting in delays.

Cendant Rental Car Facility

A private party has proposed developing a major rental car facility on International Boulevard, east of the Port of Seattle’s planned RCF, on the site of a former movie complex.

3.19.1 Transportation

Historically, the vehicle miles traveled (VMT) by drivers has continually increased in the Puget Sound region. The rate of transportation facility construction has not kept up with demand, leading to congestion throughout the region. Sea-Tac Airport has been, and would continue to be, the source of many vehicle trips. The analysis of traffic and transit impacts in Section 3.1 is a cumulative analysis, based on the results of traffic modeling and ridership modeling that incorporate past and future actions as well as projected growth that would result from development in the region. Several of the projects, such as the WSDOT SR 518/SR 99 interchange improvements and widening of SR 518, and I-5/SR 509 Freight and Congestion Relief Projects, are intended to relieve congestion on area roadways. The Port of Seattle’s S. 160th Loop Ramp and RCF projects are intended to reduce congestion on Port roads and around the airport terminal. Due to the reduction in VMT achieved by the Airport Link project, the regional cumulative traffic impact of Airport Link would be slightly less than the No-Build alternative and similar to the original project.

Section 3.1, Transportation, provides forecasts of future transportation conditions, including forecasts of No-Build and Build conditions on facilities that could be affected by Airport Link. The forecasts for the No-Build alternative already take into account many of the cumulative increases in transportation demand that

the area would experience due to increased population and employment growth, major transportation improvements, and related increases in travel. As shown in Section 3.1, Transportation, localized impacts due to Airport Link are limited and are primarily related to turn movements at intersections near stations. Given the mitigation measures identified in Section 3.1, cumulative transportation impacts with Airport Link would be the same or better than No-Build and similar to the original project.

The No-Build project definition includes the S. 160th Street Loop Ramp project, which is being designed to address congestion-related delays within the airport circulation network, particularly near the main terminal. Initial analysis by the Port of Seattle indicates that the effects of the S. 160th Street Loop Ramp project are primarily internal to the airport circulation system, and other localized traffic effects are limited.

3.19.2 Land Use and Economics

Prior to 1970, there was strong growth in the region due in large part to federal spending on aviation, expansion of military installations, import/export services, and related industrial goods. In the mid-1970s, growth slowed due to a sluggish economy. In the mid-1980s, the region experienced an economic revival with the arrival of the high-tech industry, increased spending on military technology, and an upturn in the national economy. Many rural/suburban land uses transitioned to suburban/urban with identifiable urban centers in the 1980s. Regional population grew 16 percent from 1990 to 2000. The Central Puget Sound region is continuing to experience population and employment growth. From 2000 to 2030, regional population is expected to grow 35.5 percent. Planned growth, as expressed in VISION 2020 and Destination 2030, and the development that would be associated with this growth are the most substantial actions affecting the magnitude and severity of cumulative effects in the Central Puget Sound region and the Airport Link project area. Transportation programs included in these plans are expected to increase pressure for growth along major transportation corridors within urban growth areas. In general, most reasonably foreseeable transportation and land development projects in the Airport Link project area would be consistent with regional policies to concentrate and intensify urban development.

Future projects such as the Port of Seattle S. 160th Street Loop Ramp project, Port of Seattle Airport RCF, WSDOT SR 518/SR 99 Interchange Improvements and Widening of SR 518 project, WSDOT I-5/SR 509 Freight and Congestion Relief Projects, and Port of Seattle Third Runway project could have additional land use impacts. These impacts would be largely due to displacement of businesses and residences for the development of airport-related uses and highway development. This would include non-project effects such as closure of the Radisson Hotel on Port property, and the potential for loss of employment for an estimated 30 to 40 employees if the business does not relocate. The areas within and surrounding the Sea-Tac Airport have been redeveloping to accommodate the need for airport expansion as well as the demand for airport-related uses in nearby areas. For example, the mobile home parks located south of S. 200th Street have been changed to surface parking and the airport has undertaken major renovations and improvements. Because the expected land use changes due to Airport Link are low, cumulative long-term land use effects would be similar to the No-Build alternative and would also be similar to the original project.

The population and employment projections discussed in Section 3.2 are based on the forecasted land use changes that would result from future development and growth. The light rail system, including the Airport Link extension, has been planned to accommodate projected growth. Cumulative land use impacts are expected to be lower with the Airport Link alternative than with the No-Build alternative, because expansion of the light rail system would better manage regional growth by providing mobility and access options to the airport and, to the SeaTac regional center for those living in SeaTac connecting areas.

3.19.3 Acquisitions, Displacements, and Relocations

Cumulative effects would occur in the Airport Link project area due to a number of projects in the project area that would require property acquisitions, displacements, and relocations. The Port of Seattle Third Runway project has removed over 400 residences, apartments, and businesses. The Port of Seattle

Airport RCF, Port of Seattle S. 160th Street Loop Ramp project, and WSDOT I-5/SR 509 Freight and Congestion Relief Projects would require relocation of businesses but would not be expected to substantially affect population, employment, or housing in the area. Compensation for acquisitions and mitigation for displaced businesses and residents would also be provided, as described in Section 4.1, to further minimize the potential for cumulative impacts. The original project had similar acquisition levels to those reported for Airport Link, and therefore its cumulative effects were also similar.

3.19.4 Neighborhoods and Populations

Historically, the neighborhoods in the project area have been altered by the long-term development of Sea-Tac Airport, its related infrastructure, the development of area freeways, increased density and urbanization, and other major projects. Future projects such as the Port of Seattle S. 160th Street Loop Ramp project, Port of Seattle Airport RCF, WSDOT SR 518/SR 99 Interchange Improvements and Widening of SR 518 project, WSDOT I-5/SR 509 Freight and Congestion Relief Projects, and Port of Seattle Third Runway project could have additional land use, displacement, visual, and noise impacts affecting neighborhoods surrounding the airport. Considering the low levels of impacts to neighborhoods and the beneficial access improvements to area residents, Airport Link would have similar to less cumulative impacts to neighborhoods and populations, compared to the No-Build alternative or the original project.

3.19.5 Visual Resources and Aesthetics

The visual character of the Seattle/Puget Sound region has changed profoundly as the regional population has grown over the last 100 years. Development has displaced native vegetation and occupied or altered natural areas, and views have been altered.

In general, light rail facilities and future developments would be consistent with the City of SeaTac's policies to concentrate and intensify urban development. In station areas where existing uses are automobile-oriented and/or less dense than allowed by City plans and zoning, the visual impacts of reasonably foreseeable redevelopment would likely include larger buildings, greater visual scale, and more pedestrian amenities than existing conditions. Light rail, with other newer developments along the International Boulevard corridor, can create an opportunity to redevelop urban areas in a more visually consistent way. Cumulative visual impacts can be lessened or offset by increased amenities, including landscaping and lighting. A number of the major transportation and development projects may involve the removal of existing vegetation. The development and operation of Airport Link, as with the original project, would be visually consistent with the cumulative growth and development of the area. No-Build would involve no change in visual conditions beyond the development of the Initial Segment.

3.19.6 Air Quality

Pollutants of concern associated with transportation projects were described in Section 3.6.1. Substantial progress has been made in reducing air pollutant emissions from motor vehicles and improving air quality since the 1970s. While the average weekday VMT in the Central Puget Sound region has increased from 30 million miles in 1981 to 65 million in 1999 (PSRC 2000a), the emissions of pollutants associated with transportation sources has decreased. Carbon monoxide (CO) is the pollutant most closely tied to transportation, with over 90 percent of the CO emissions in the Puget Sound urban area generated by transportation sources. Regionally, maximum measured CO concentrations have decreased over the past 20 years. Other transportation pollutants have followed similar but less pronounced trends. However, the historical trends toward improvement in air quality are growing increasingly difficult to maintain (Puget Sound Clean Air Agency 2003).

The air quality hotspot analysis is based on projected future traffic volumes. These future volumes are provided by traffic models that incorporate the effects of past and future actions affecting population, employment, land use, and changes to the transportation system. The regional burden analysis is based on regional modeling, which incorporates projected changes to land use, employment, population, and travel

behavior. One of the primary goals of many of the proposed regional transportation projects is to increase mobility, often by improving transit options. Increased mobility is expected to decrease VMT and/or decrease traffic congestion; therefore, the cumulative benefits to air quality would be slightly greater under Airport Link than the No-Build alternative. Benefits would be similar to the original project.

3.19.7 Noise and Vibration

The level of noise in the Seattle/Puget Sound region has changed substantially as the regional population has grown over the last 100 years. Industrial, transportation, construction, and other activities have continued to increase the level of noise throughout the region, and this increase is expected to continue. As regional VMT have increased, the noise from transportation uses in transportation corridors has increased. The traffic noise impact analysis in Section 3.7 is based on projected future traffic volumes with the project, as well as forecasted background traffic growth and programmed transportation improvements.

FTA noise criteria address cumulative impacts by using a sliding scale that allows less project-related noise increase where ambient noise levels are already high. Cumulative impacts from light rail project noise and vibration could increase where future noise-producing uses would be developed near sensitive receptors. In the project area, one of the primary noise sources is air traffic to and from Sea-Tac Airport. In addition to the aircraft flights, increased traffic on SR 518, SR 99, and other roadways in the project area is expected to increase future noise levels. Although all project-related noise impacts would be mitigated under Airport Link, ambient noise levels due to changes to air traffic growth and the development of other transportation projects could affect cumulative noise levels. The Airport Link noise would be a small part of the environment, and cumulative noise impacts under the Airport Link, original project, and No-Build alternatives would be similar.

3.19.8 Ecosystems and Water Resources

Because of the relationship between water quality, wetlands, and fish and wildlife habitat, these resources have been considered together in this analysis of cumulative impacts. Many historic actions have directly or indirectly caused a substantial loss and degradation of wildlife habitat, including wetlands. Large-scale losses of habitat and wetlands can be traced to historic, major projects intended to provide flood control, irrigation, hydroelectricity, land reclamation, and navigational improvements, including channelizing and redirecting rivers and streams, filling intertidal habitat, and creating barriers to salmon spawning areas.

Widespread loss of wetlands and fish and wildlife habitat is also the result of the accumulated impacts of numerous smaller projects that, considered individually, would not be significant. These include both direct and indirect impacts resulting from farming, logging, and other resource extraction activities; roadway construction; and residential, commercial, and industrial development. Such development has directly removed habitat and wetlands. It has also resulted in indirect effects, including increased stormwater runoff to streams and rivers.

Land use development patterns in recent decades have contributed to adverse effects on wetlands, water quality, and habitat. Dispersed, low-density growth has dominated development trends in the latter part of this century, consuming more land per capita than in the earlier periods of growth. Between 1970 and 1990, this region's population grew by about 30 percent, but the area of developed land grew by about 80 percent. In that same time frame, average daily VMT per person increased by more than 150 percent. Increased automobile travel and dispersed land use patterns adversely impact environmental quality, including air quality, water quality, and wildlife habitat. The extensive road network and increased automobile ownership have been significant factors in facilitating the more dispersed development patterns. As more land is converted to buildings and parking lots, additional impacts on local water quality, hydrology, and ecosystems occur. These impacts include increased levels of pollutant loading and runoff; sediment entering streams, rivers, and wetlands, which degrades fish habitat; and a shift in wildlife species composition to species adapted to human disturbance, open areas, and landscaped vegetation.

In the Airport Link project area, most of the proposed projects would occur on sites that are already developed or where little habitat or wetlands currently exist. New parking facilities (such as the Master Park Park-and-Fly expansion) in and around the airport and SeaTac City Center would support automobile-oriented land uses and automobile travel to this area, contrary to the objectives of reducing reliance on the automobile. The two main planned projects in the project vicinity include the S. 160th Street Loop Ramp project and the RCF. These two projects would not significantly change the amount of impervious surface in the basin as compared to existing conditions, and stormwater controls are expected to be included as part of the projects. Therefore, it is not likely that cumulative impacts would worsen. Redevelopment of such sites would more likely have a positive effect, because higher standards would be applied to the redevelopment than were used for the existing uses.

Expansion of the light rail system would allow the region to better manage regional growth by providing mobility and access options to the airport, the SeaTac regional center, and for those living in SeaTac and connecting areas. In this context, both the direct and indirect cumulative impacts on water quality, wetlands, and habitat would be expected to be slightly lower with the Airport Link than with the No-Build alternative. The impacts of Airport Link are similar to those of the original project, and their contribution to cumulative ecosystem and water resources impacts would be similar, reflecting increased development of the area.

3.19.9 Energy

Energy consumption in the region has increased as population has increased. The continued population growth creates both a direct impact on the demand for energy as well as an indirect impact through economic growth. Petroleum use accounts for 45 percent of total energy use in Washington State. Trends over the last 10 to 15 years reflect a lack of progress in fuel economy, mainly due to the popularity of light trucks and sports utility vehicles, which are less fuel-efficient than cars. Energy consumption is expected to be lower with the Airport Link than with the No-Build alternative, because, as discussed in Section 3.10, Airport Link would reduce the demand for vehicle trips. This is consistent with the findings for the original project.

3.19.10 Geology and Soils

Existing urban development has already substantially altered geologic surface conditions throughout the Airport Link project area. Continued development, such as the reasonably foreseeable projects listed above, continues to cumulatively impact geologic conditions. Airport Link is not expected to contribute substantially to these cumulative geologic impacts. Cumulative geologic impacts would be slightly greater under the Airport Link alternative and the original project, compared to the No-Build alternative.

3.19.11 Hazardous Materials

Early development of the region resulted in many sites becoming contaminated due to industrial uses. With regulations, cleanup programs, and increased awareness, some of these sites have been cleaned up and the rate of contamination has slowed. Current requirements should prevent significant further contamination; however, some contamination in the region could occur due to accidents or noncompliance. Projects that require acquisition of land may involve clean up or containment of contamination, resulting in a positive cumulative impact. Cumulative hazardous materials impacts with Airport Link and the original project should be more beneficial than under the No-Build alternative.

3.19.12 Electromagnetic Fields

No conclusive evidence exists showing a link between electromagnetic fields generated from rail transit projects and adverse human health effects. The other projects in the area do not involve substantial electrification, and cumulative electromagnetic field conditions would be similar with Airport Link or the original project alone.

3.19.13 Public Services

As regional population has increased, the demand for public services has increased. Demand for these services would continue to increase with the expected growth in regional population. Proposed private and public projects and general growth in the Airport Link project area would increase the need for fire and emergency medical, law enforcement, and other public services. The Airport Link project, together with the proposed developments, such as the Port of Seattle S. 160th Street Loop Ramp project, Port of Seattle Airport RCF, WSDOT SR 518/SR 99 Interchange Improvements and Widening of SR 518, and WSDOT I-5/SR 509 Freight and Congestion Relief Projects, would alter roadway infrastructure and may affect future traffic patterns. In turn, these changes may affect existing public service access and vehicle routes. The traffic volume projections incorporate effects of future transportation improvements and growth. Airport Link, as with the original project, would contribute slightly more to cumulative demand for public services than the No-Build alternative.

3.19.14 Utilities

Growth in the project corridor can increase demand on existing utilities, ultimately requiring service providers to increase their capacity and infrastructure. In general, electrical, water, sewer, telecommunications, and other utilities currently have sufficient capacity or are adding additional capacity to serve the region in the future (based on local capital facilities planning). Local capital facilities plans are based on serving the projected population growth anticipated in regional and local land use and transportation plans. Airport Link would involve utility relocations but would not substantially alter the demand forecasts of area service providers. Specific projects, other than Airport Link, that would require additional utilities or utility relocations include the Port of Seattle RCF project, the S. 160th Street Loop Ramp project, and the Port of Seattle Third Runway project. However, the potential for increased cumulative impacts due to these projects would be avoided by the individual mitigation measures that the projects have or would be expected to commit to relocate or replace affected utilities. Airport Link, as with the original project, would contribute slightly more to cumulative demand for additional utilities than the No-Build alternative.

3.19.15 Historic and Archaeological Resources

Past projects have already affected archaeological and historic resources in the project area. Airport Link would not affect the historic property (Angle Lake Elementary School) in the area. Potential impacts to archaeological sites resulting from Airport Link construction would be combined with the potential impacts resulting from continued urban encroachment into the relatively less-developed portions of the project area and/or from redevelopment to improve or intensify existing land uses and transportation infrastructure. As other scheduled transportation improvement projects and land use changes are implemented, cumulative impacts to archaeological sites can occur from more intensive and ground-invasive landscape modification. The Port of Seattle's Third Runway project would require extensive ground modification. Potential commercial and residential development in the vicinity of light rail stations could impact nearby historic properties unaffected by station operation alone, thus cumulative impacts to historic or archaeological resources could be slightly greater under Airport Link and the original project than with the No-Build alternative.

3.19.16 Parklands

Demand for and use of most parks and recreation facilities has increased in proportion to the population growth of the region. Projected population growth would increase demand and use of existing parks and recreation facilities in SeaTac. No cumulative impacts to parklands are expected under Airport Link, the original project, or the No-Build alternative.

3.19.17 Cumulative Construction Effects

Temporary cumulative effects could occur where other projects in the vicinity of Airport Link would be built at the same time, or close in time, to Airport Link construction. This could increase the cumulative intensity or duration of construction-related impacts. Some of the Port of Seattle, WSDOT, or private projects are in the same vicinity and could be built at the same time.

Specific cumulative impacts would depend on the construction methods, phasing, and intensity of these other projects, in combination with Airport Link construction. As noted in the Construction Impacts, Section 3.18, detailed construction plans are not available at this (conceptual engineering) phase for Airport Link, nor for most other projects that could be constructed during the same time period. As the design progresses for Airport Link, Sound Transit and the Port would further define the construction approach. Construction would be coordinated with the City of SeaTac, WSDOT, and other agencies in order to minimize conflicts and potential cumulative effects through phasing and selection of construction methods. As noted above, these measures would be further developed as the design progresses into final design and construction contracting.

The following cumulative construction impacts could occur where other projects, such as Port of Seattle S. 160th Street Loop Ramp project, Port of Seattle Airport RCF, WSDOT SR 518/SR 99 Interchange Improvements and Widening of SR 518 project, WSDOT I-5/S. 188th Street Interchange Unstable Slope project, WSDOT I-5/SR 509 Freight and Congestion Relief Projects, Master Park Park-and-Fly Lot Expansion, and Port of Seattle Third Runway project, are constructed near Airport Link construction sites:

- Increased construction noise impacts.
- Increased impacts from construction-generated dust and emissions.
- Increased risk of landslides, erosion, and water quality impacts where construction would occur in geologic hazard areas, near water bodies, or where construction phasing (to minimize conflicts between projects) would require earthwork during the wet season.
- Increased traffic congestion and delays.
- Additional temporary parking loss.
- Broader temporary habitat and wildlife impacts due to temporary clearing and disturbance.
- Increased demand for energy to operate construction equipment.
- Compromise of temporary fire and emergency medical and law enforcement response times. At times, emergency vehicles may need to take alternate routes to avoid construction delays.
- Increased visual impacts related to concurrent construction staging sites and activity.
- Police and/or security personnel required to conduct traffic flow and provide general safety and security services.
- Options (i.e., available corridors) may be limited for relocating or installing new utilities during light rail construction.
- Increased probability of temporary utility service interruptions.

Coordinating construction schedules and activities among the various project sponsors would be important for minimizing cumulative construction impacts. Cumulative construction impacts would be greater under the Airport Link alternative than under the No-Build alternative. The construction activities for Airport Link are higher in magnitude than for the original project. However, given the scope of the other projects in the area, the overall cumulative effects for the construction of the combined projects would remain similar for Airport Link, the original project, and No-Build.

3.19.18 Mitigation

No additional mitigation is necessary beyond that discussed by element of the environment earlier in Chapter 3.

Central Link Light Rail Transit Project

Airport Link Environmental Assessment

APPENDIX A

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Appendix A References

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Central Link Light Rail Transit Project

Airport Link Environmental Assessment

APPENDIX B

Distribution List

Appendix B Distribution List

Hard copies or electronic copies of this document have been sent to the parties below, which includes recipients of the Central Link Light Rail Transit Project Final EIS, the Tukwila Freeway Route Final Supplemental EIS, and the Amended Record of Decision for the Initial Segment. Recipients and others on Sound Transit's mailing list were also notified of the availability of the document via mailed postcards and Sound Transit's web site (www.soundtransit.org).

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Federal Aviation Administration
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U.S. Bureau of Indian Affairs
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WA State Department of Community Trade and Economic Development
WA State Department of Ecology
WA State Department of Fish and Wildlife
WA State Department of Health
WA State Department of Natural Resources
 Interagency Committee for Outdoor Recreation
WA State Department of Social and Health Services
WA State Department of Transportation

Public Transportation and Rail Division
Urban Rail Program Manager
WA State Office of Archaeology and Historic Preservation
WA State Office of the Attorney General
WA State Office of Urban Mobility
WA State Parks and Recreation Commission
WA State Patrol
WA State Utilities and Transportation Commission
University of Washington

REGIONAL

Economic Development Council of Seattle and King County
Puget Sound Clean Air Agency
Puget Sound Regional Council

COUNTIES

King County
Development of Environmental Services
Development of Natural Resources
Executive Office
Regional Policy and Planning
Regional Transit Manager
Roads Division
Transit Division
Pierce County
Snohomish County

PORTS

Port of Seattle

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Everett Transit
Pierce Transit
Sound Transit Board
Seattle Monorail Project

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City of Bellevue
Mayor
City of Redmond
City of Renton
Transportation System Division
City of SeaTac
Assistant City Manager
City of Seattle
City of Tukwila

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Everett Public Library
Evergreen State College
Evergreen State College Library
Green River Community College
Highline Community College Library
Institute of Transportation Engineers
King County Transportation and Natural Resources Library
King County Library System
Lake Washington Technical College
Library Municipal Research and Services of Washington
Milton Memorial Library
North Seattle Community College Library
Northwestern University
Pierce College Library
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Seattle Public Library

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Seattle University, School of Law
Seattle Vocational Institute
Shoreline Community College
Sno-Isle Regional Library System
South Seattle Community College
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University of California at Berkeley
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University of Washington Libraries
UW – Architecture & Urban Planning Library
UW Engineering Library
Washington State DOT Library
Washington State Library

RAILROADS AND RAIL SERVICE

Amtrak
Burlington Northern Santa Fe Railroad
Union Pacific Railroad

SCHOOLS AND COMMUNITY CENTERS

City of Seattle Community Centers
 Greenlake
 Jefferson
 Miller
 Queen Anne
 Rainier Beach
 Rainier
 Ravenna Eckstein
 Van Asselt
City of Seattle Neighborhood Service Centers
 Capitol Hill
 Central
 Greater Duwamish
 Greenwood – NW Seattle
 Lake-City – North Seattle
 Greenwood – Northwest
 Lake Union – Fremont
 Queen Anne/Magnolia
 Southeast

Southwest/Delridge
University District & Northeast Seattle
Highline Community Hospital Specialty Center
Highline School District
Harborview Medical Center
North SeaTac Park Community Center
Seattle Central Community College
Seattle Central School District
Seattle School District
Seattle University
South Central School District
Swedish Medical Center
Tukwila School District #406
Tukwila Community/Senior Center

UTILITIES

AT&T
GTE Northwest
GTE Wireless
Highline Water District
King County Water District #20
King County Water District #125
MCI Communications
Midway Sewer District
Olympic Pipeline
Pacific Fiber Link
Puget Sound Energy
Seattle City Light
Summit Cablevision
TCI
U.S. West Communications
Val-View Sewer District

ELECTED OFFICIALS

The Honorable Christine Gregoire
Governor of Washington
First District Congressman Jay Inslee
King County Executive Ron Sims
King County Council Members
Seattle City Council Members
Seattle Mayor's Office

Mayor Greg Nichols
Tukwila City Council Members
Tukwila Mayor's Office
Mayor Steve Mullet
SeaTac City Council Members
SeaTac Mayor's Office
Mayor Frank Hansen
Terry Anderson Deputy Mayor

BUSINESS AND COMMUNITY ORGANIZATIONS

1000 Friends of Washington
African American Jewish Coalition for Justice
Aurora-Lincoln Neighborhood Planning
Ballard Chamber of Commerce
Ballard Neighborhood Service Center
Beacon Hill Chamber of Commerce
Beacon Hill Urban Village Community Planning Committee
Bicycle Alliance of Washington
Black Dollar Days Task Force
Brighton Neighborhood Council
Brighton/Dunlap Community Council
Broadway Business Improvement Association
Capitol Hill Chamber of Commerce
Capitol Hill Community Council
Cascade Bicycle Club
Central Neighborhood Planning
Central Area Development Association
Columbia City Neighborhood Association
Columbia City Revitalization Committee
Columbia Place Community Council
Community Coalition for Environmental Justice
Community Development Association
Downtown Seattle Association
Duwamish Committee
Duwamish Improvement Club
Duwamish Valley Neighborhood Preservation Coalition
Eastlake Community Council
El Centro De La Raza
Feet First
First Hill Improvement Association
Foster Community Club
Freemont Chamber of Commerce

Freemont Neighborhood Council
Friends of Othello Park/ Rainier Valley TAC
Genessee Merchants Association
Greater Duwamish District Council
Greater Seattle Chamber of Commerce
Greater University Chamber of Commerce
Greenlake Community Council
Greenlake 2020 Transportation Task Force
Groundswell Off Broadway
Hawthorne Hills Community Club
Highway 99 Action Committee
Holly Park Community Council
Jackson Place Community Council
Judkins Park Community Council
Lakewood/Seward Park Community Council
League of Women Voters
Light Rail Task Force
Maple Leaf Community Council
McMicken Heights Community Club
Mt. Baker Community Club
Mt. Zion Transit Task Force
N.O.I.S.E.
North Beacon Hill Council
North Rainier Neighborhood
Pedestrian Advisory Board
Pike/Pine Neighborhood Planning Group
Pike/Pine Urban Neighborhood Coalition
Pioneer Square Community Council
Pioneer Square Business Improvement Association
Pioneer Square Neighborhood Planning
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Queen Anne Neighborhood Plan
Rainier Audubon Society
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La Quinta Inn (Lq Cigna I)
Lander Street Properties
Lindal Cedar Homes
LPL Financial
M & M Finishers
MacDonald Meat Company
MacMillan – Piper
Multi-Care
Municipal League of King County
National Car Rentals (Markov Brothers)
National Pride Car Wash
Pape Properties
Perfect Copy & Print
Phelps Tire
Pizza Hut (18613 International LLC)

Praxair Distribution, Inc.
Raddison Hotel (Port owned property)
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Richard William Markov et al
Riverton McDonalds
Sabey Corporation
SeaTac Skyway Inn (Skyway LLC)
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South County Journal
South Town Auto Rebuild
Southcenter Engraving
Sud City Car Wash
Tammy's Bakery
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Central Link Light Rail Transit Project

Airport Link Environmental Assessment

APPENDIX C

Design Drawings

C.1 Light Rail Elements of Airport Link

DRAWING DIRECTORY

This appendix highlights the light rail elements of Airport Link would extend south from the intersection of International Boulevard and S. 154th Street to S. 200th Street and 28th Avenue S. Below are general descriptions of drawing vicinities.

SE3-KP01: Tukwila International Boulevard Station, south of S. 154th Street and International Boulevard.

SE3-KP02: Near northbound and southbound North Airport Expressway (NAE) and S. 160th Street.

SE3-KP03: International Boulevard and S. 170th Street overcrossing.

SE3-KP04: North of International Boulevard and S. 176th Street intersection.

SE4-KP01: From International Boulevard and S. 176th Street intersection to International Boulevard and S. 182nd Street.

SE4-KP02: Near beginning of 28th Avenue S. to the intersection of 28th Avenue S. and S. 188th Street.

L70-KP01: Along 28th Avenue S., between S. 188th Street and S. 190th Street.

L70-KP02: Near the intersection of 28th Avenue S. and S. 192nd Street.

L70-KP03: Along 28th Avenue S., from north of S. 194th Street to south of S. 196th Place.

L70-KP04: Along 28th Avenue S., north of S. 200th Street.

L70-KP05: S. 200th Station, at the intersection of 28th Avenue S. and S. 200th Street.

SE3-KX01: Typical cross sections of at-grade and retained fill road median.

SE3-KX02: Typical aerial guideway cross section.

SE2-AU01: Airport/SeaTac Station.

SE2-AP01: Airport/SeaTac Station platform level.

SE2-AM01: Airport/SeaTac Station mezzanine level.

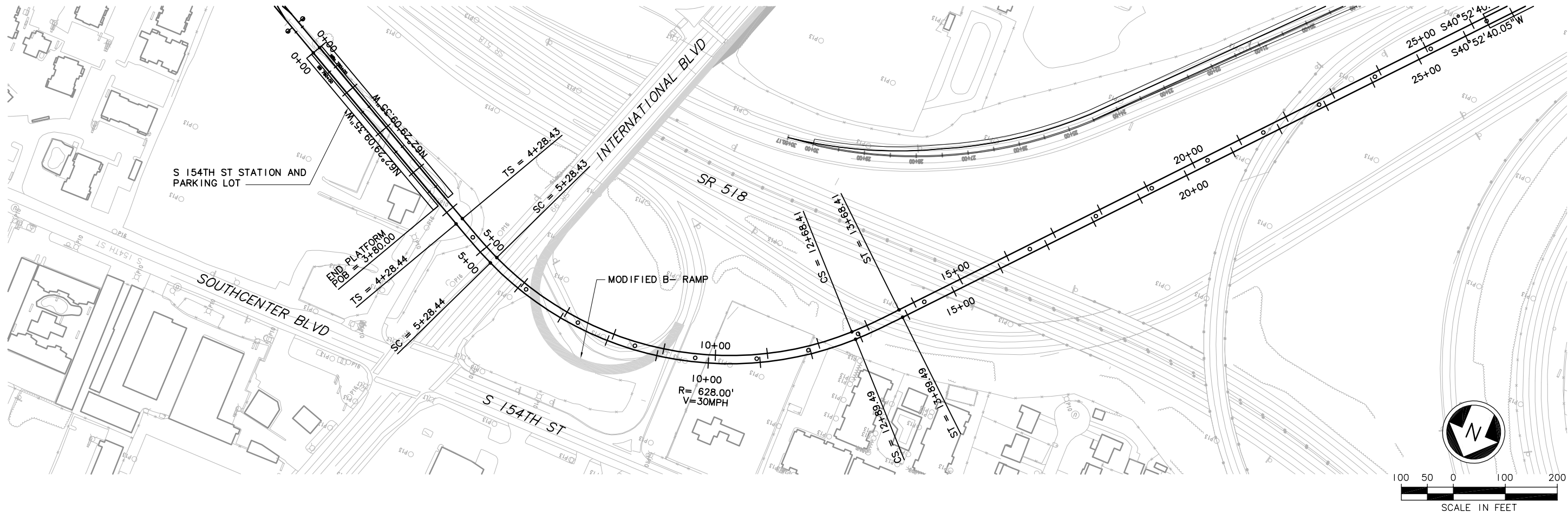
SE2-AX01: Typical cross section of Airport/SeaTac Station.

N84-AG01: S. 200th Station site plan.

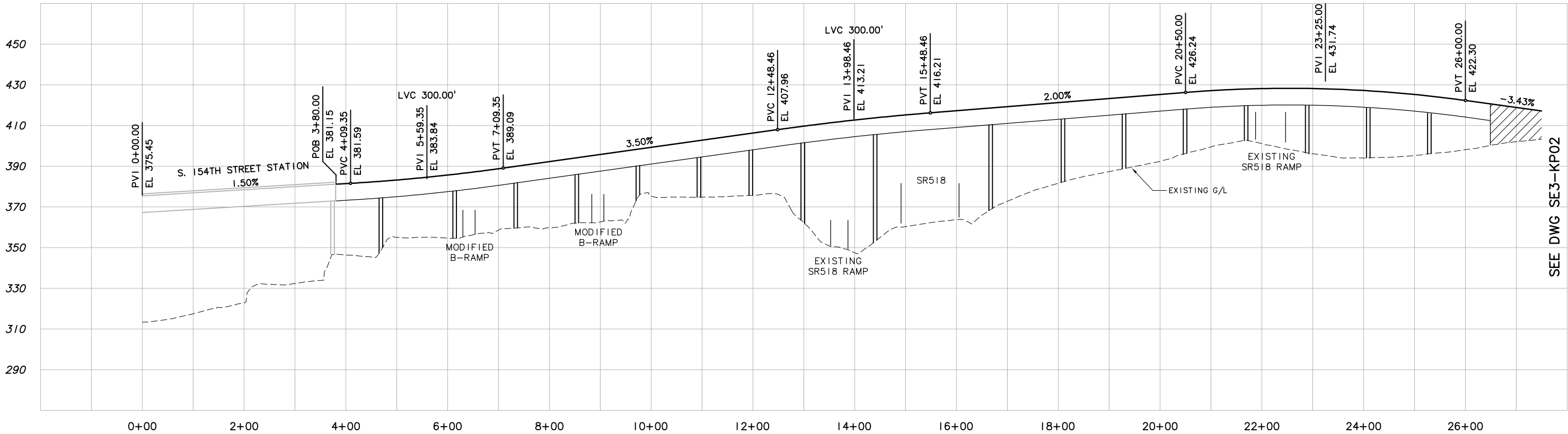
N84-AE10: S. 200th Station profile.

N84-AX22: Cross section of S. 200th Station.

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ST/A03/3C17
ST/A03/3C23
ST/A03/3C24
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SEE DWG SE3-KP02



SEE DWG SE3-KP02

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No.	Date	Dsn.	Chk.	App.	Revisions

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J. BAILEY
Drawn By:
J. BAILEY
Checked By:
I. GUSTETICH
Approved By:

PRELIMINARY



Submitted:

Date:

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Date:

Scale:
1"=100'
Filename:
S70_SE3_KP01
Contract No.:
Date:
01/20/05

LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
AIRPORT LINK
TRACK PLAN AND PROFILE
STA 3+80 TO STA 27+00

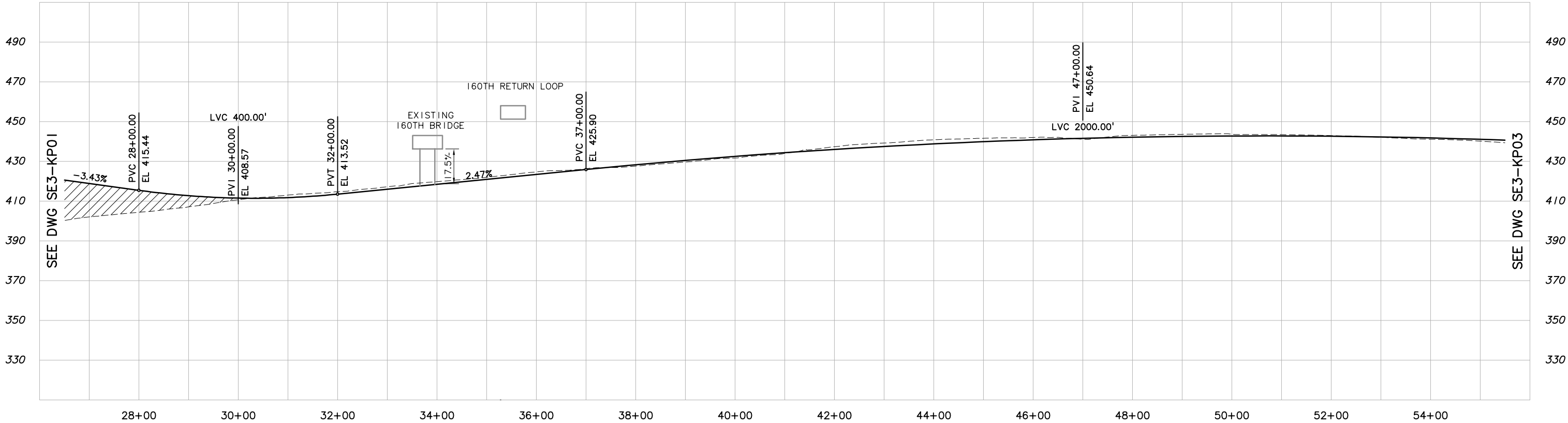
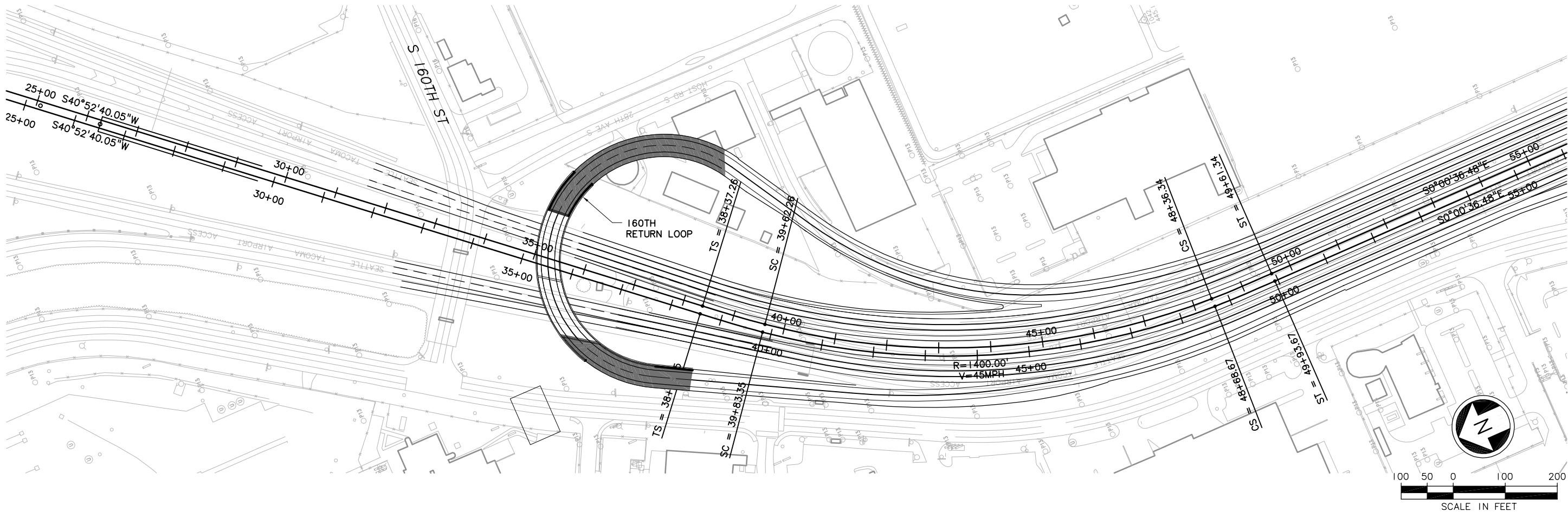
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SEE DWG SE3-KP01

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LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
AIRPORT LINK
TRACK PLAN AND PROFILE
STA 27+00 TO STA 55+00

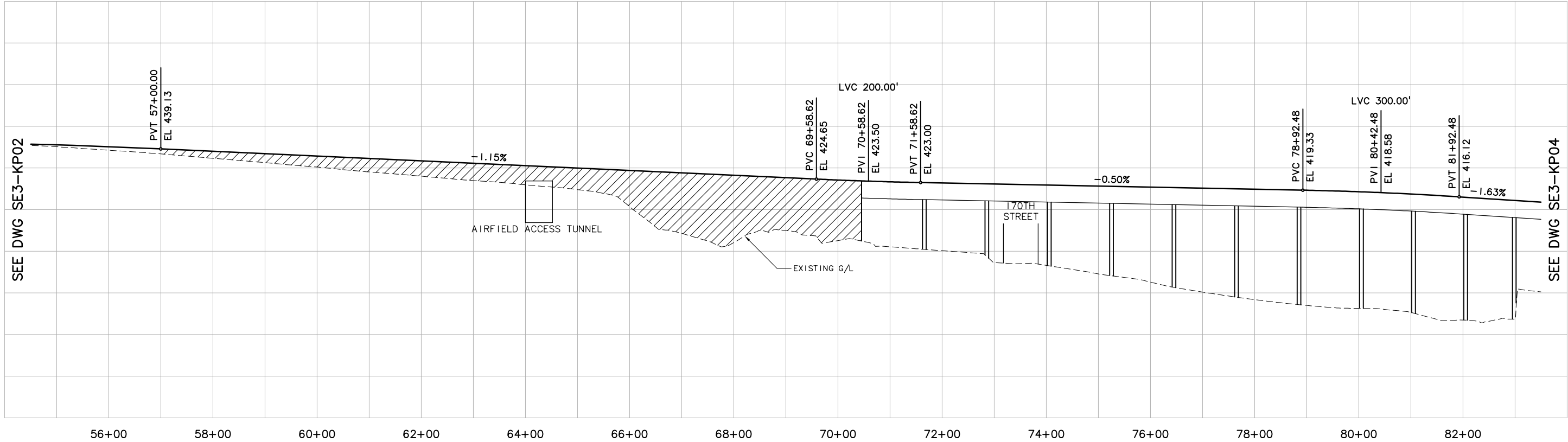
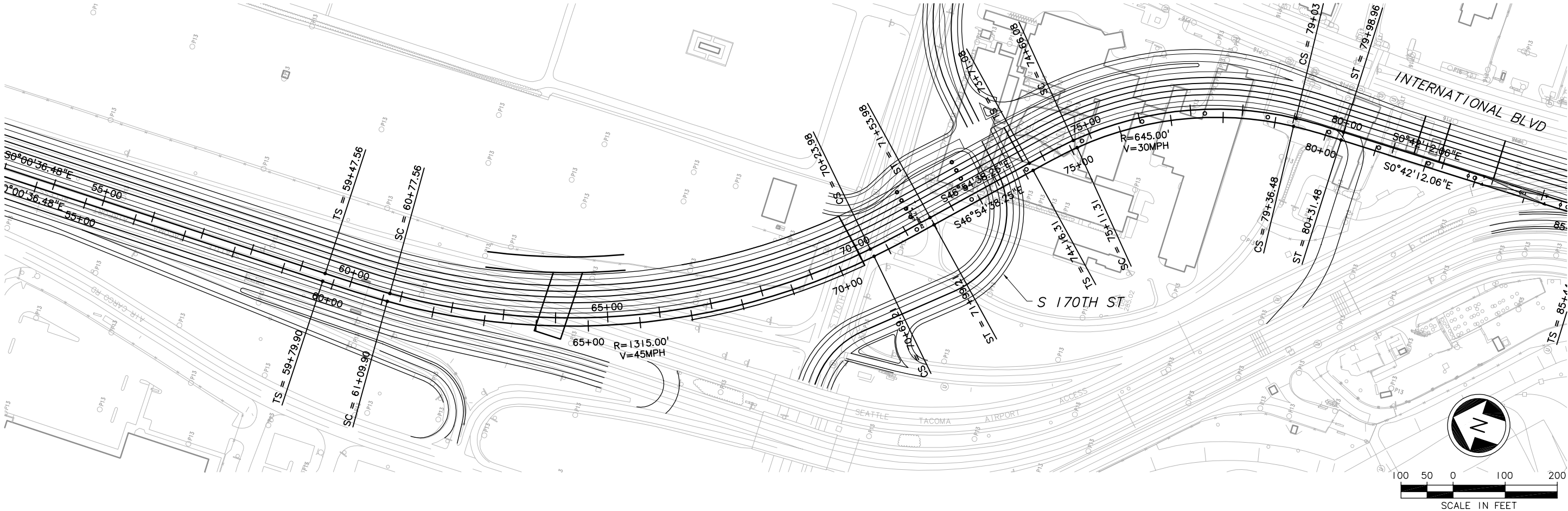
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REG-PRE
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ST/A03/3C29
ST/A03/3C33
ST/A03/3C34
ST_Enabling
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LTSCALE
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SEE DWG SE3-KP02

SEE DWG SE3-KP04



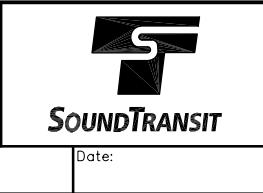
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Contract No.:
Date: 01/20/05

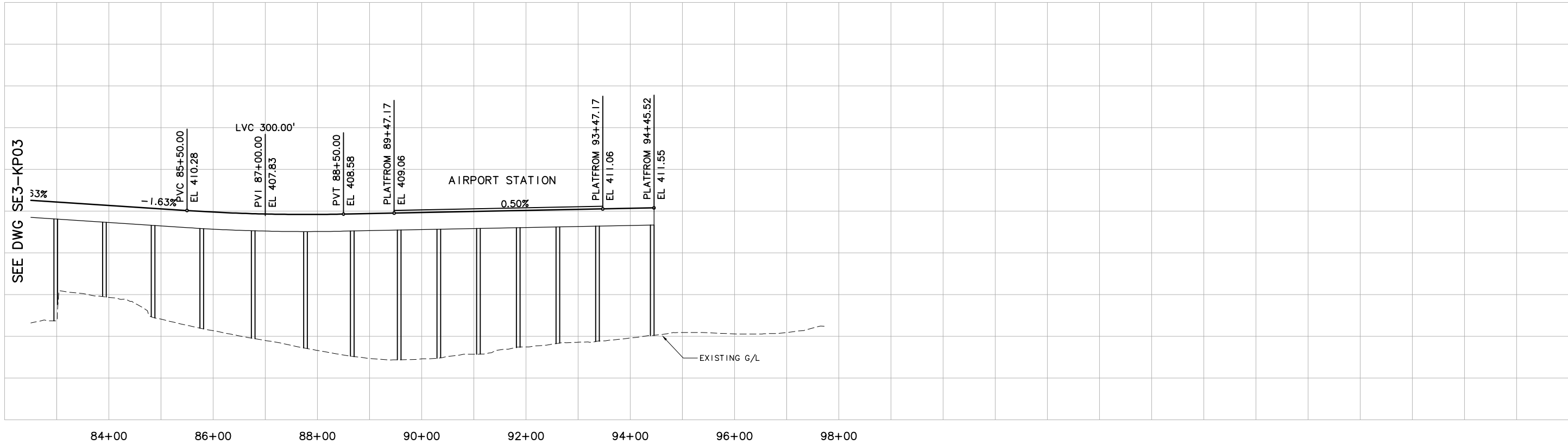
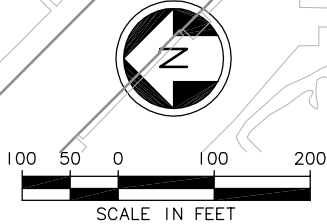
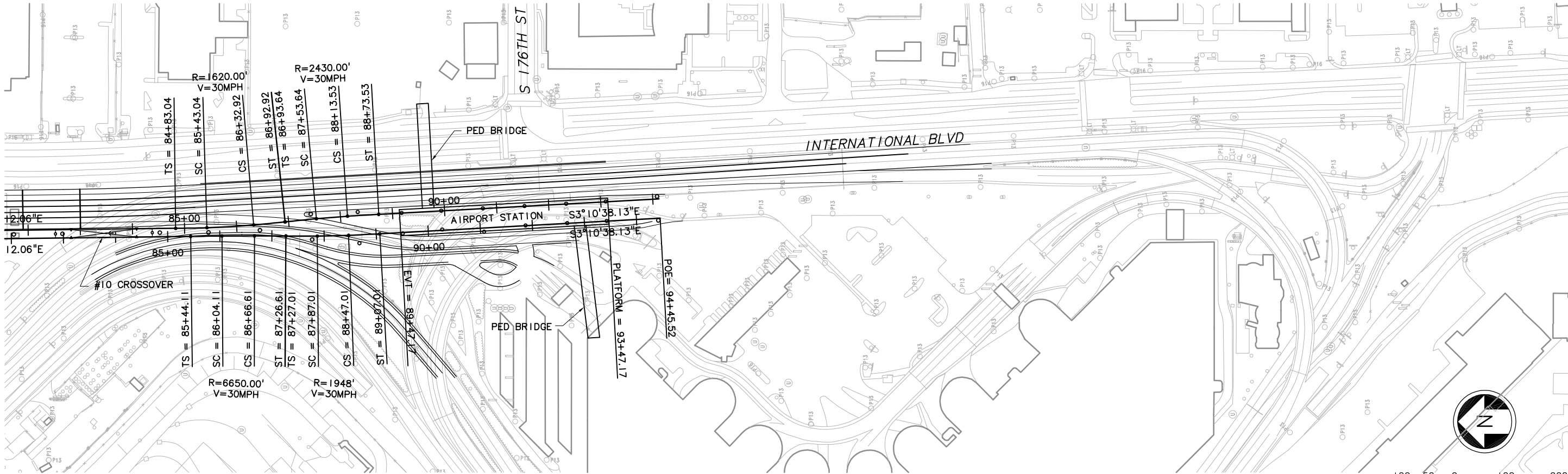
LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
AIRPORT LINK
TRACK PLAN AND PROFILE
STA 55+00 TO STA 83+00

Drawing No.: SE3-KP03
Sheet No.: Rev.:

XREF'S
Resolved
REG--PRE
ST/A03/3C29
ST/A03/3C34
ST_Enabling
ZG--2234H
s70_se3_ka
Unresolved

LTSCALE
1=1

SEE DWG SE3-KP03



C:\work\S70_SE3_KP04.dwg
04/18/05 11:20 : wigginst DEW3061

No.	Date	Dsn.	Chk.	App.	Revisions

Designed By:
J. BAILEY
Drawn By:
J. BAILEY
Checked By:
I. GUSTETICH
Approved By:

PRELIMINARY



Submitted:

Date:

Approved:



Date:

Scale:
1"=100'
Filename:
S70_SE3_KP04
Contract No.:
Date:
01/20/05

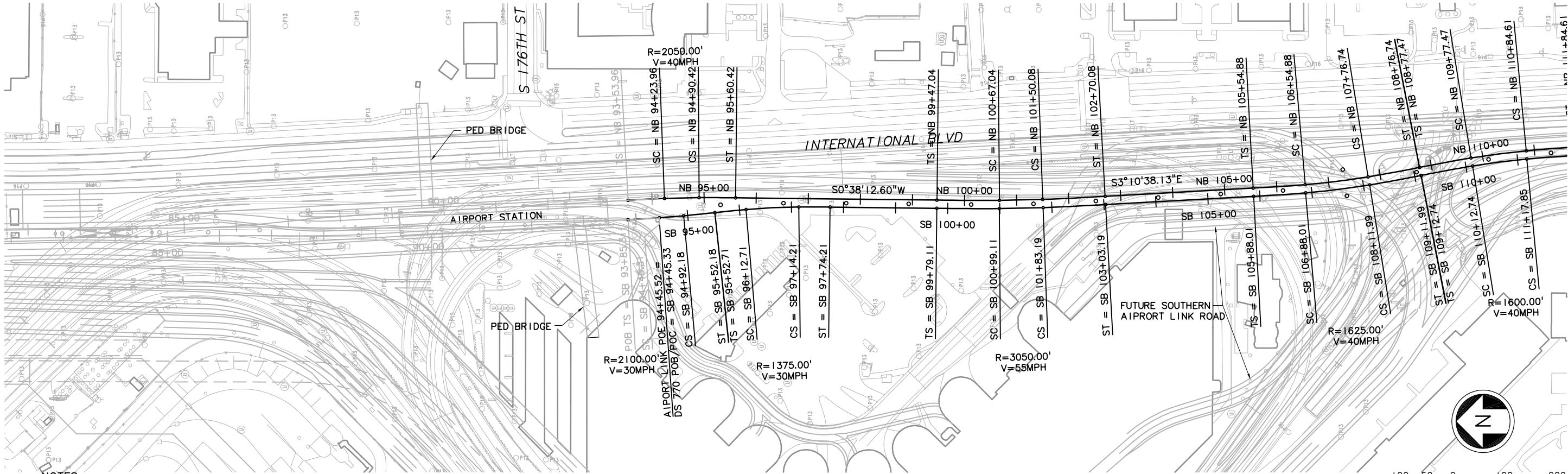
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SOUTH CORRIDOR
AIRPORT LINK
TRACK PLAN AND PROFILE
STA 83+00 TO STA 94+45.52

Drawing No.:
SE3-KP04
Sheet No.:
Rev.:

XREF'S
Resolved
Unresolved

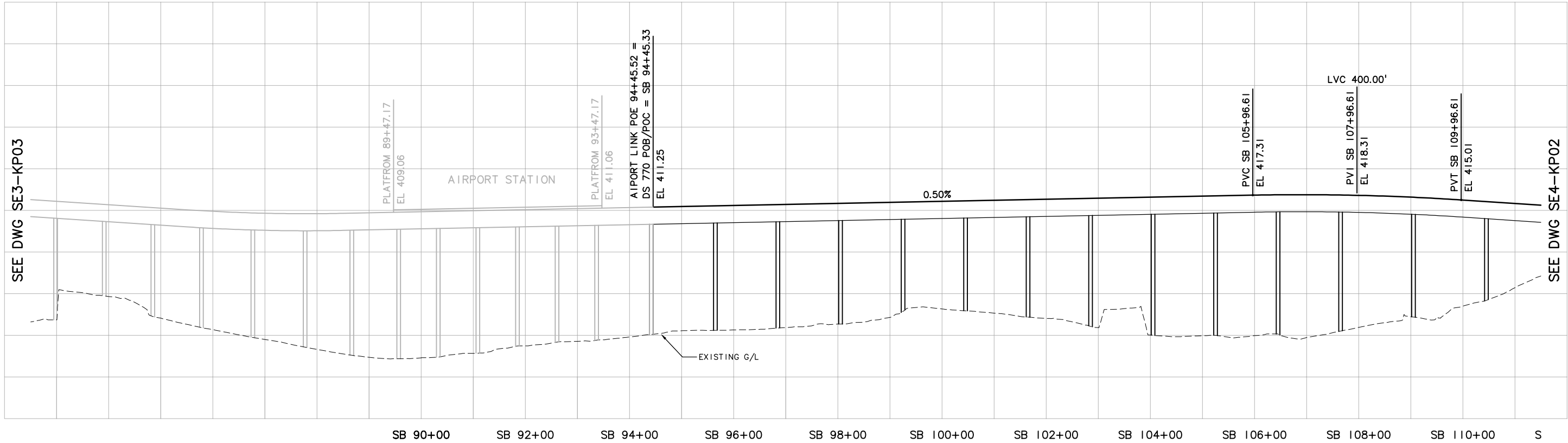
LTSCALE
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H:\work\S70_SE4_KP01.dwg
01/27/05 08:58 : baileyj OEW3059



NOTES:

HORIZONTAL & VERTICAL DATUM: BASED IN PORT OF SEATTLE DATUM.



No.	Date	Dsn.	Chk.	App.	Revisions

Designed By:
J. BAILEY
Drawn By:
J. BAILEY
Checked By:
I. GUSTETICH
Approved By:

PRELIMINARY



Submitted:

Date:

Approved:



Date:

Scale:
1"=100'
Filename:
S70_SE4_KP01.DWG
Contract No.:
Date:
01/20/05

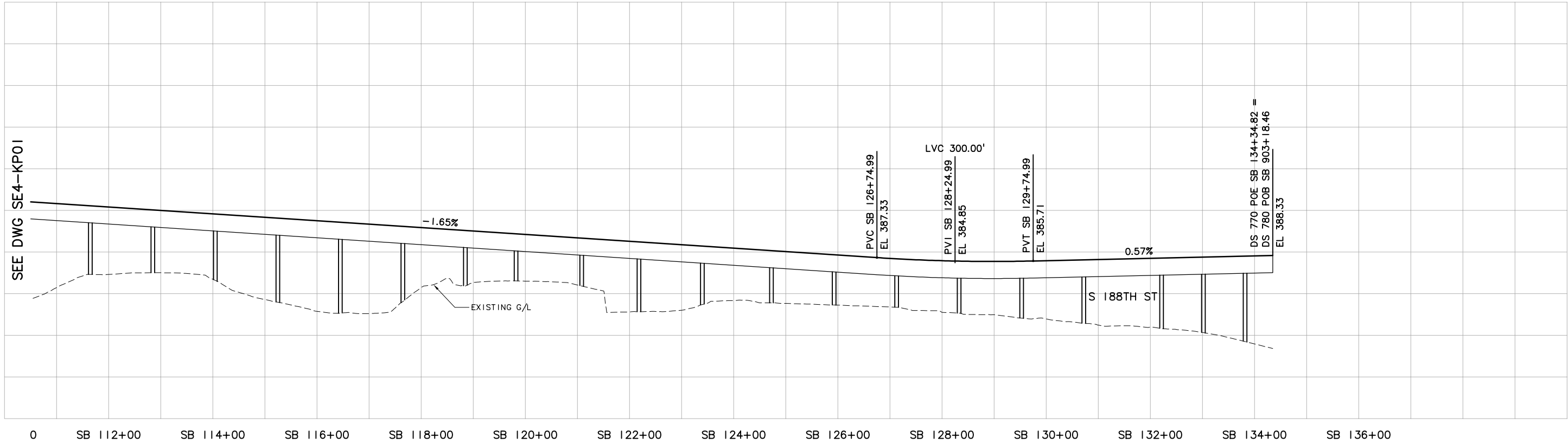
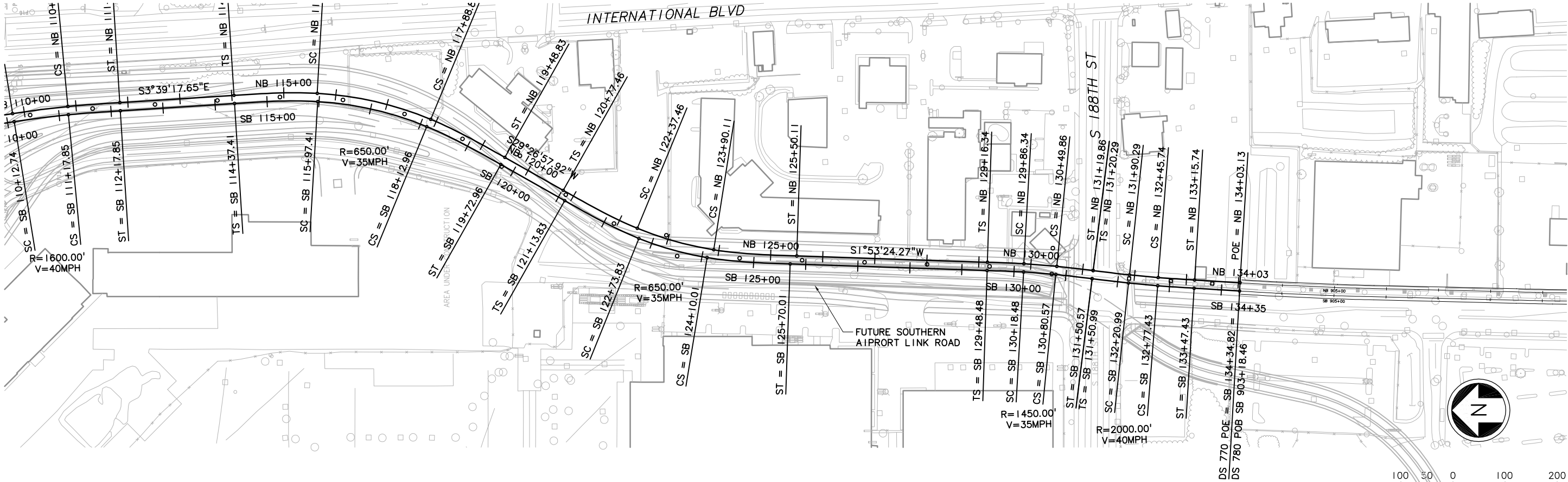
LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
SEGMENT DS 770
TRACK PLAN AND PROFILE
SB 94+45.33 TO STA SB 111+00

Drawing No.:
SE4-KP01
Sheet No.:
Rev.:

XREF'S
Resolved
S80_L70_KA
NULL_ALTERNATIVE
REG-PRE
ST/A0313C34
ZG-2234H
s70_se4_ka
xss80_L70_ka
Unresolved

LTSCALE
1=1

SEE DWG SE4-KP01



H:\work\S70_SE4_KP02.dwg
01/27/05 08:58 : baileyj OEW3059

No.	Date	Dsn.	Chk.	App.	Revisions

Designed By:
J. BAILEY
Drawn By:
J. BAILEY
Checked By:
I. GUSTETICH
Approved By:

PRELIMINARY



Submitted:

Date:

Approved:



Date:

Scale:
1"=100'
Filename:
S70_SE4_KP02.DWG
Contract No.:
Date:
01/20/05

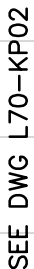
LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
SEGMENT DS 770
TRACK PLAN AND PROFILE
STA SB 111+00 TO STA SB 134+34.82

Drawing No.:
SE4-KP02
Sheet No.:
Rev.:

LTSCALE

1=1

HORIZONTAL DATUM: SOUND TRANSIT LOCAL DATUM (SOUTH ZONE) US FEET.
VERTICAL DATUM: NAVD88



Designed By:	J. BAILEY
Drawn By:	J. BAILEY
Checked By:	
Approved By:	

PRELIMINARY



Submitted:

Date:

Approved:

Date:



Scale:	H: 1"=40'; V: 1"=10'
Filename:	S80_L70_KP01.dwg
Contract No.:	DS 780

LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
SEGMENT DS780
TRACK PLAN & PROFILE
STA SB 903+18.46 TO STA SB 909+00

Drawing No.:
L70-KP01
Sheet No.: Rev.

H:\work\S80_L70_KP01.dwg
21/05 13:31 : baileyj OEW3059

XREF'S
Resolved
ZG-2234H
ZG-G20020
ZG-SPRE
28EBASE
28PBASE
28PEXRW
S80_L70_KA
Unresolved

LTSCALE
1=1

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01/21/05 11:03 : baileyj OEW3059

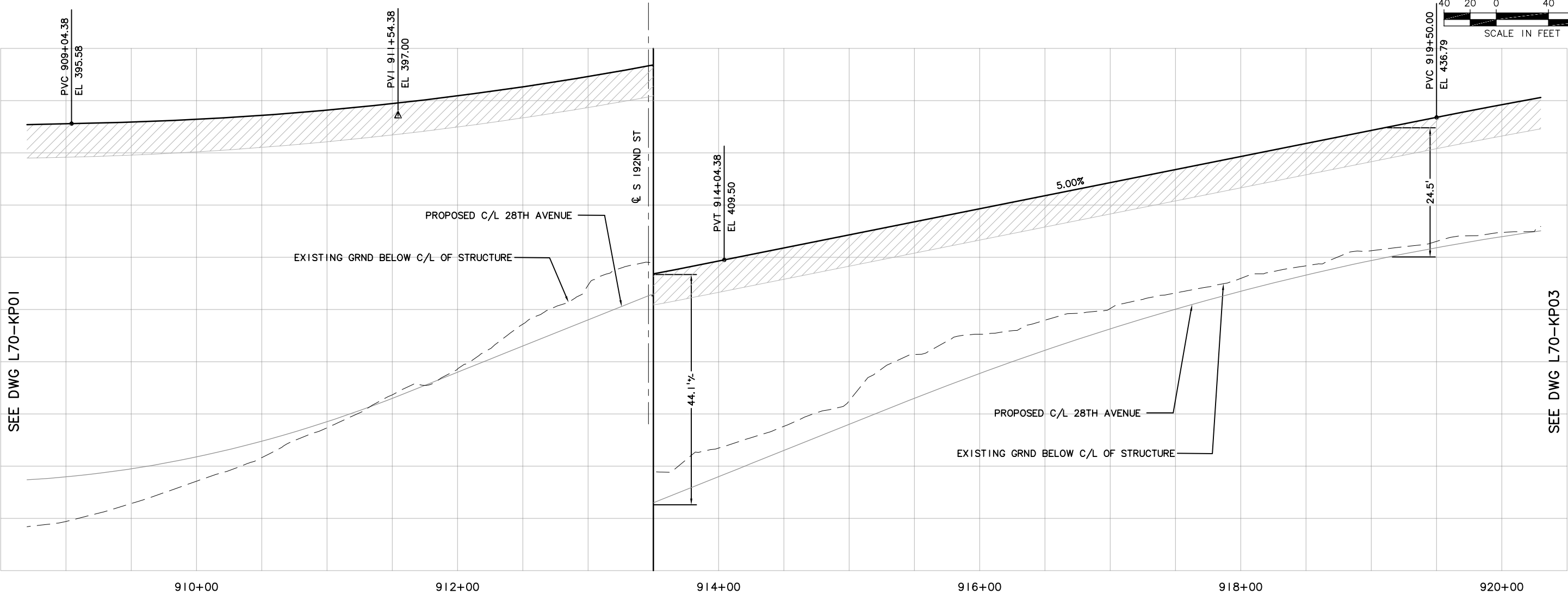
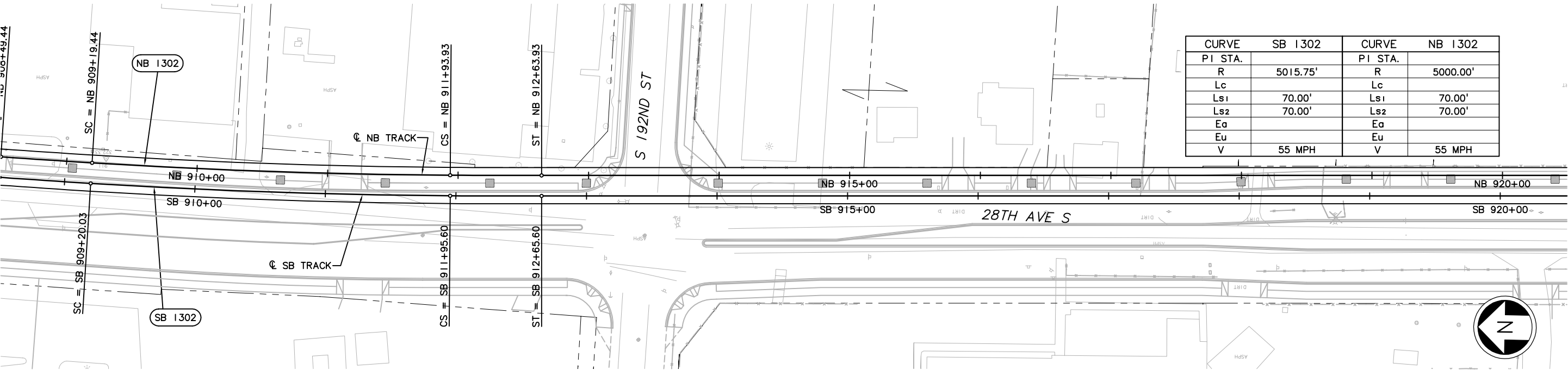
SEE DWG L70-KP01

SEE DWG L70-KP01

SEE DWG L70-KP03

SEE DWG L70-KP03

CURVE SB 1302		CURVE NB 1302	
PI STA.		PI STA.	
R	5015.75'	R	5000.00'
Lc		Lc	
Ls1	70.00'	Ls1	70.00'
Ls2	70.00'	Ls2	70.00'
Ea		Ea	
Eu		Eu	
V	55 MPH	V	55 MPH



No.	Date	Dsn.	Chk.	App.	Revisions

Designed By:	J. BAILEY
Drawn By:	J. BAILEY
Checked By:	
Approved By:	

PRELIMINARY



Submitted:

Date:

Approved:



Date:

Scale:	H: 1"=40'; V: 1"=10'
Filename:	S80_L70_KP02.dwg
Contract No.:	DS 780
Date:	

LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
SEGMENT DS780
TRACK PLAN & PROFILE
STA SB 909+00 TO STA SB 920+00

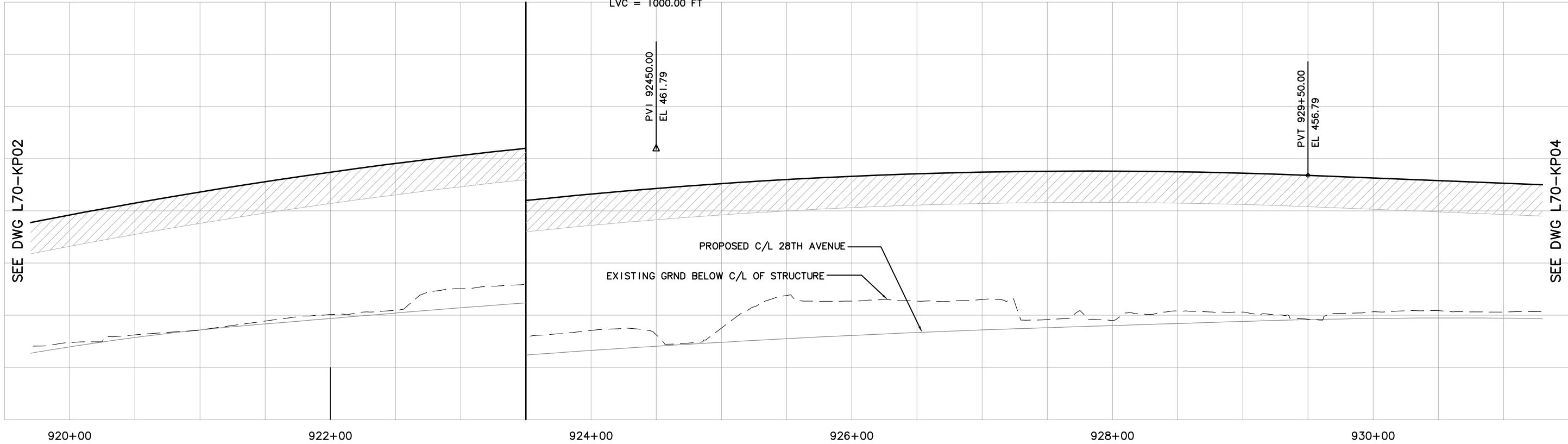
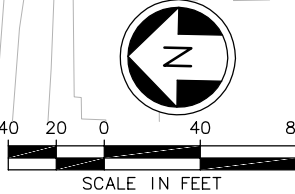
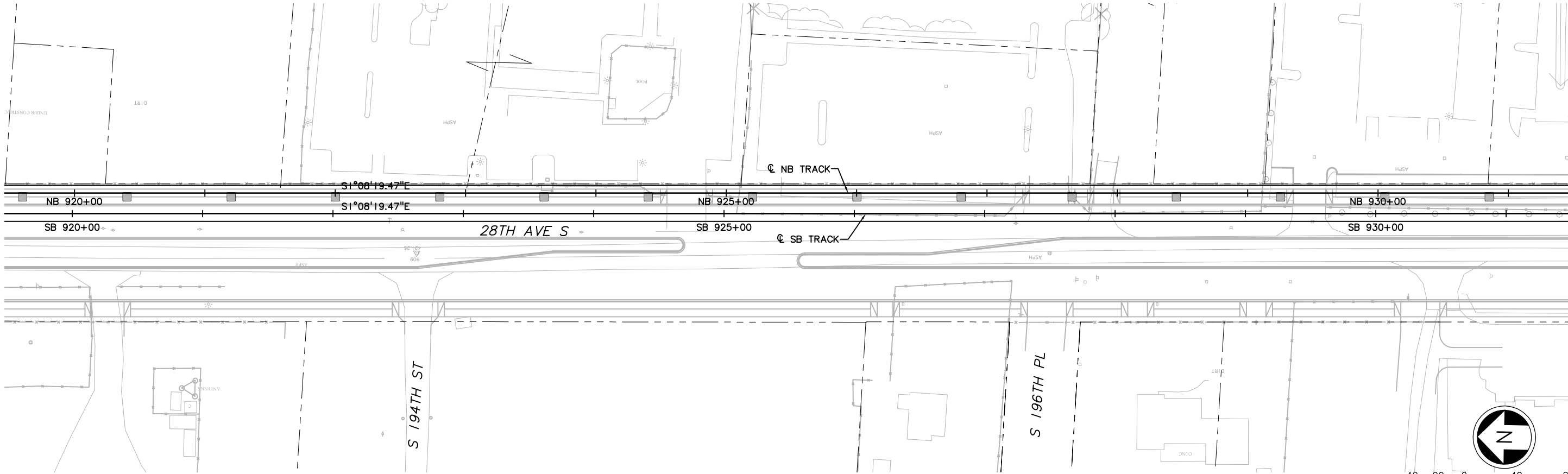
Drawing No.:	L70-KP02
Sheet No.:	Rev.:

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ZG-G20020
ZG-SPRE
28EBASE
28PBASE
28PEXRW
S80_L70_KA
Unresolved

LTSCALE
1=1

SEE DWG L70-KP02

SEE DWG L70-KP04



SEE DWG L70-KP02

SEE DWG L70-KP04

No.	Date	Dsn.	Chk.	App.	Revisions

Designed By:
J. BAILEY
Drawn By:
J. BAILEY
Checked By:
Approved By:

PRELIMINARY



Submitted:

Date:

Approved:



Date:

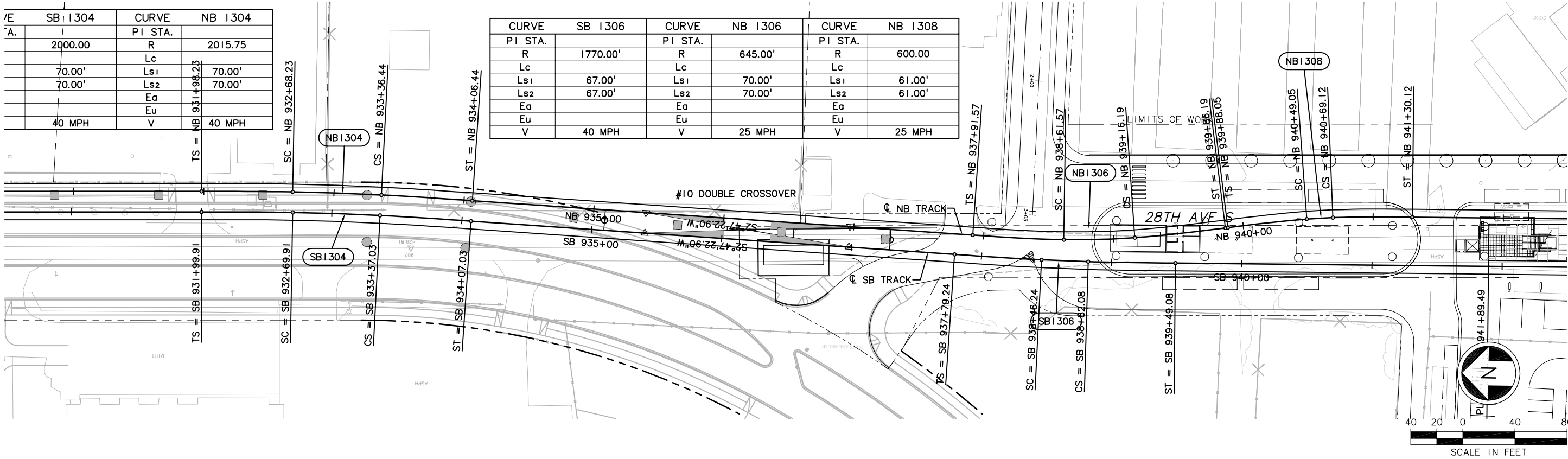
Scale:
H: 1"=40'; V: 1"=10'
Filename:
S80_L70_KP03.dwg
Contract No.:
DS 780
Date:

LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
SEGMENT DS780
TRACK PLAN & PROFILE
STA SB 920+00 TO STA SB 931+00

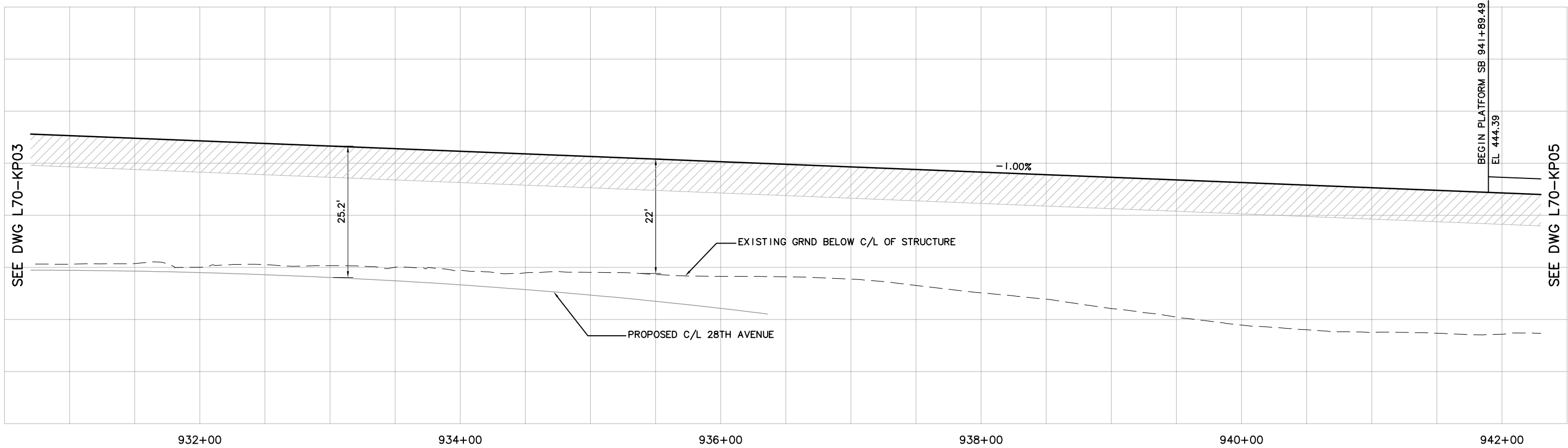
Drawing No.:
L70-KP03
Sheet No.:
Rev.:

XREF'S
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ZG-G20020
ZG-SPRE
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28PBASE
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S80_L70_KA
S80_N84_A6
Unresolved
LTSCALE
1=1

SEE DWG L70-KP03



SEE DWG L70-KP05

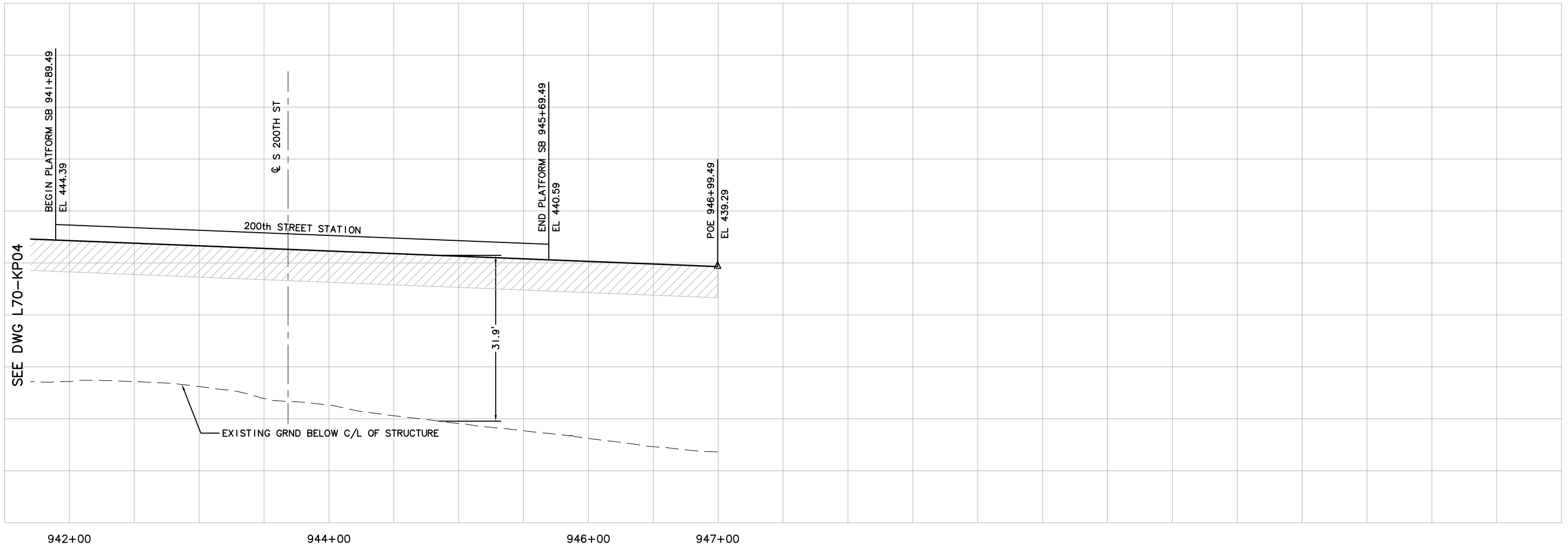
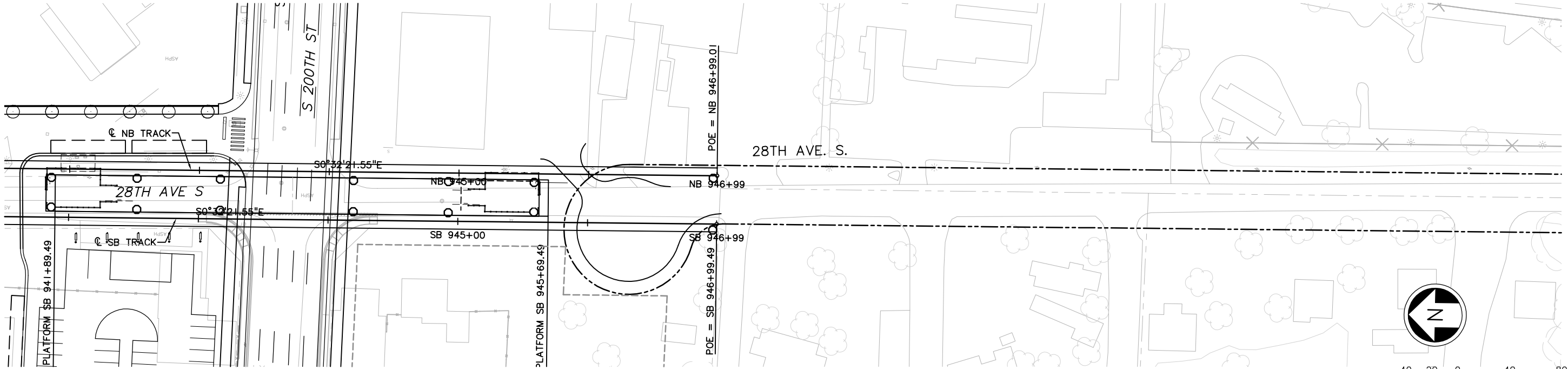


No.					Date					Dsn.					Chk.					App.					Revisions				
Designed By:					J. BAILEY					Drawn By:					J. BAILEY					Checked By:					Approved By:				
Submitted:					Date:					Approved:					Date:					Scale:					H: 1"=40'; V: 1"=10'				
Filename:					S80_L70_KP04.dwg					Contract No.:					DS 780					LINK LIGHT RAIL PROJECT					SOUTH CORRIDOR				
Track Plan & Profile					STA SB 931+00 TO STA SB 942+00					Drawing No.:					L70-KP04					Sheet No.:					Rev.:				

XREF'S
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ZG-2234H
ZG-G20020
ZG-SPRE
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28PBASE
28PEXRW
S80_L70_KA
S80_N84_AG
Unresolved

LTSCALE
1=1

SEE DWG L70-KP04



H:\work\S80_L70_KP05.dwg
02/04/05 09:48 : baileyj OEW3059

No.	Date	Dsn.	Chk.	App.	Revisions

Designed By:	J. BAILEY
Drawn By:	J. BAILEY
Checked By:	
Approved By:	

PRELIMINARY



Submitted:

Date:

Approved:



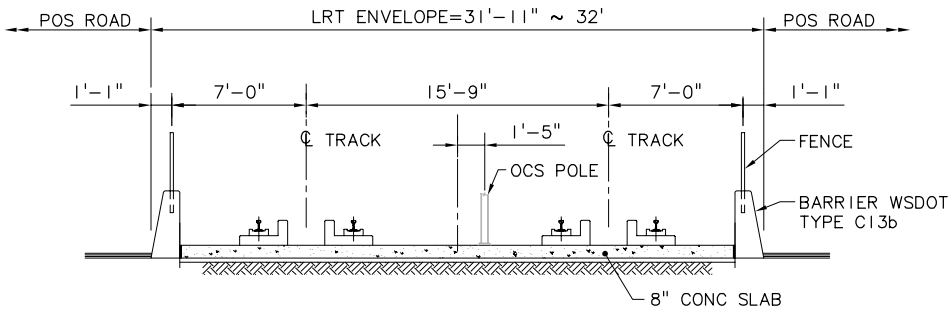
Date:

Scale:	H: 1"=40'; V: 1"=10'
Filename:	S80_L70_KP05.dwg
Contract No.:	DS 780
Date:	

LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
SEGMENT DS780
TRACK PLAN & PROFILE
STA SB 942+00 TO STA SB 946+99.49

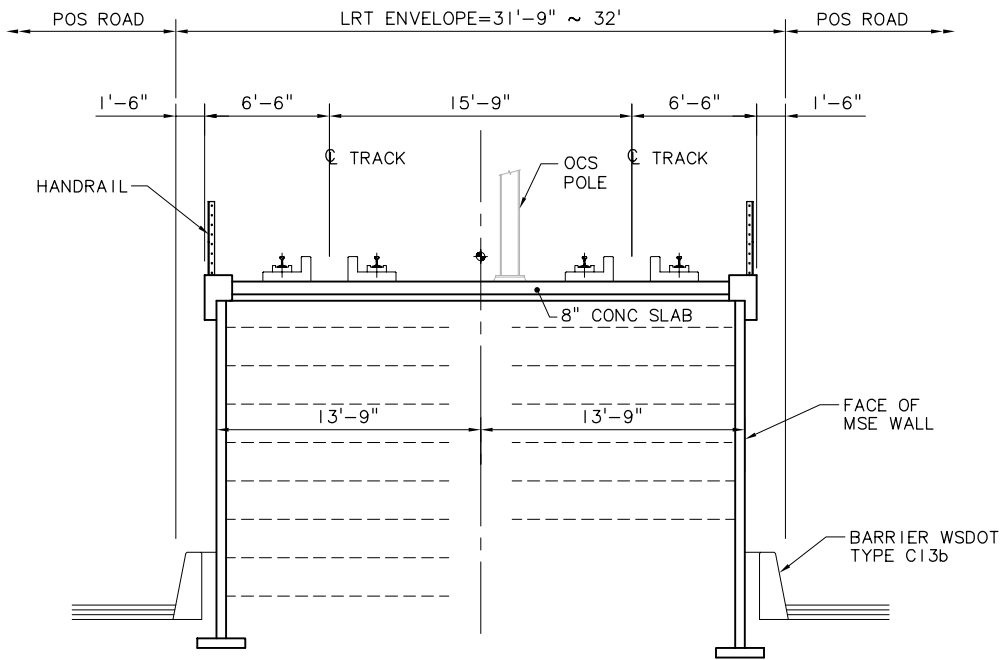
Drawing No.:	L70-KP05
Sheet No.:	Rev.:

XREF'S
Resolved
REG-PRE
20-2234H
Unresolved
LTSCALE
1=1



TYPICAL SECTION
AT-GRADE - ROAD MEDIAN

SCALE: NTS



TYPICAL SECTION
RETAINED FILL - ROAD MEDIAN

SCALE: NTS



C:\work\S70_SE3_KX01.dwg
04/18/05 11:20 : wigginst DEW3061

No.	Date	Dsn.	Chk.	App.	Revisions

Designed By:
I. GUSTETICH
Drawn By:
J. NAPOLITANO
Checked By:
J. BAILEY
Approved By:

PRELIMINARY



Submitted:

Date:

Approved:



Date:

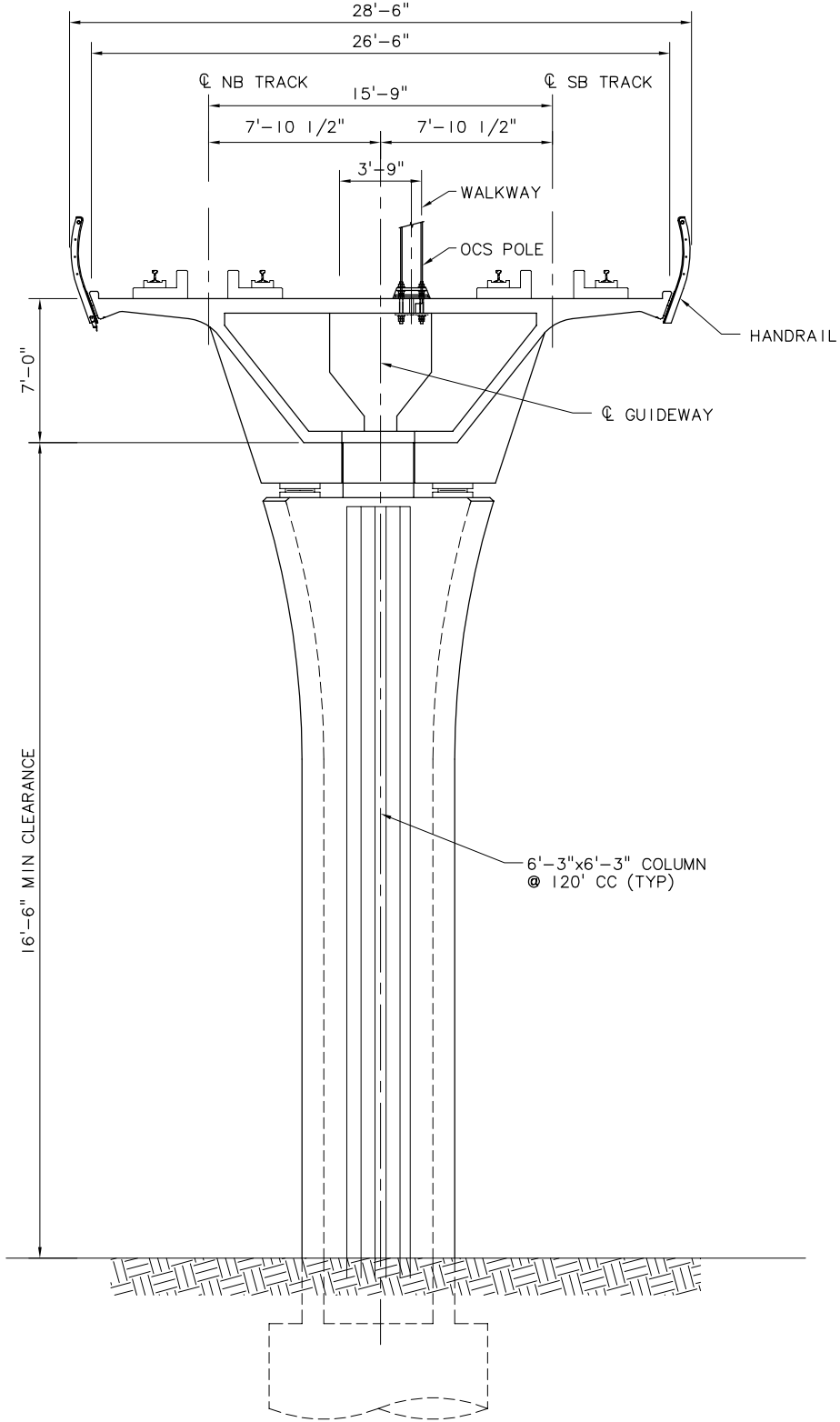
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AS SHOWN
Filename:
S70_SE3_KX01.dwg
Contract No.:
Date:
01/20/05

LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
AIRPORT LINK
TYPICAL SECTIONS


Drawing No.:
SE3-KX01
Sheet No.:
Rev.:

XREF'S
Resolved
REG-PRE
20-2234H
Unresolved
LTSCALE
1=1

1
2
3
4
5
C:\work\S70_SE3_KX02.dwg
04/18/05 11:21 : wigginst DEW3061



AERIAL GUIDEWAY – TYPICAL SECTION
SCALE: NOT TO SCALE

						Designed By: I. GUSTETICH	PRELIMINARY					Scale: AS SHOWN	LINK LIGHT RAIL PROJECT SOUTH CORRIDOR AIRPORT LINK TYPICAL SECTIONS		Drawing No.: SE3-KX02
						Drawn By: J. NAPOLITANO						Filename: S70_SE3_KX02.dwg			
						Checked By: J. BAILEY						Contract No.:			
						Approved By:						Date: 01/20/05			
No.	Date	Dsn.	Chk.	App.	Revisions							Sheet No.:			Rev.:

LTSCALE

1=1

LEGEND:

-

ELEVATOR &
STAIR ACCESS TO
OVERHEAD LRT
ACCESS

NEW BUS STOP &
HOV LANE

OVERHEAD PED.
WALKWAY

BUS ONLY

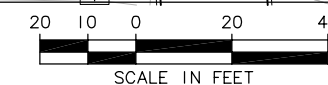
161, 184, 199

161, 184, 199

STATION
MEZZANINE

SE2-AP/AM

LRT STATION
MEZZANINE



						Designed By:
						A. ENGEL
						Drawn By:
						Checked By:
						Approved By:
No.	Date	By	Chk.	App.	Revisions	

PRELIMINARY

HEWITT
ARCHITECTS

Submitted:

Date:	
-------	--

Approved:	
-----------	--



Date

Scale:	1"=20'
Filename:	S70_SE2_AU01
Contract No.:	
Date:	01/20/05

LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
AIRPORT LINK
AIRPORT STATION
INTERNATIONAL BLVD IMPROVEMENTS

Drawing No.:	SE2-AU01
Sheet No.:	Rev. 01

H:\work\S70_SE2_AU01.dwg
05/11/05 10:30 : baileyj OEW3059

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S70_SE2_AZ
ST/A03/3C29
ST/A03/3C34
ST_Enabling
s70_se3_ka
Unresolved
LTSCALE
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2

3

4

5

C:\work\S70_SE2_AP01.dwg
04/18/05 11:19 : wigginst DEW3061

No.	Date	By	Chk.	App.	Revisions

Designed By:	A. ENGEL
Drawn By:	
Checked By:	
Approved By:	

PRELIMINARY

HEWITT
ARCHITECTS

Submitted:

Date:

Approved:

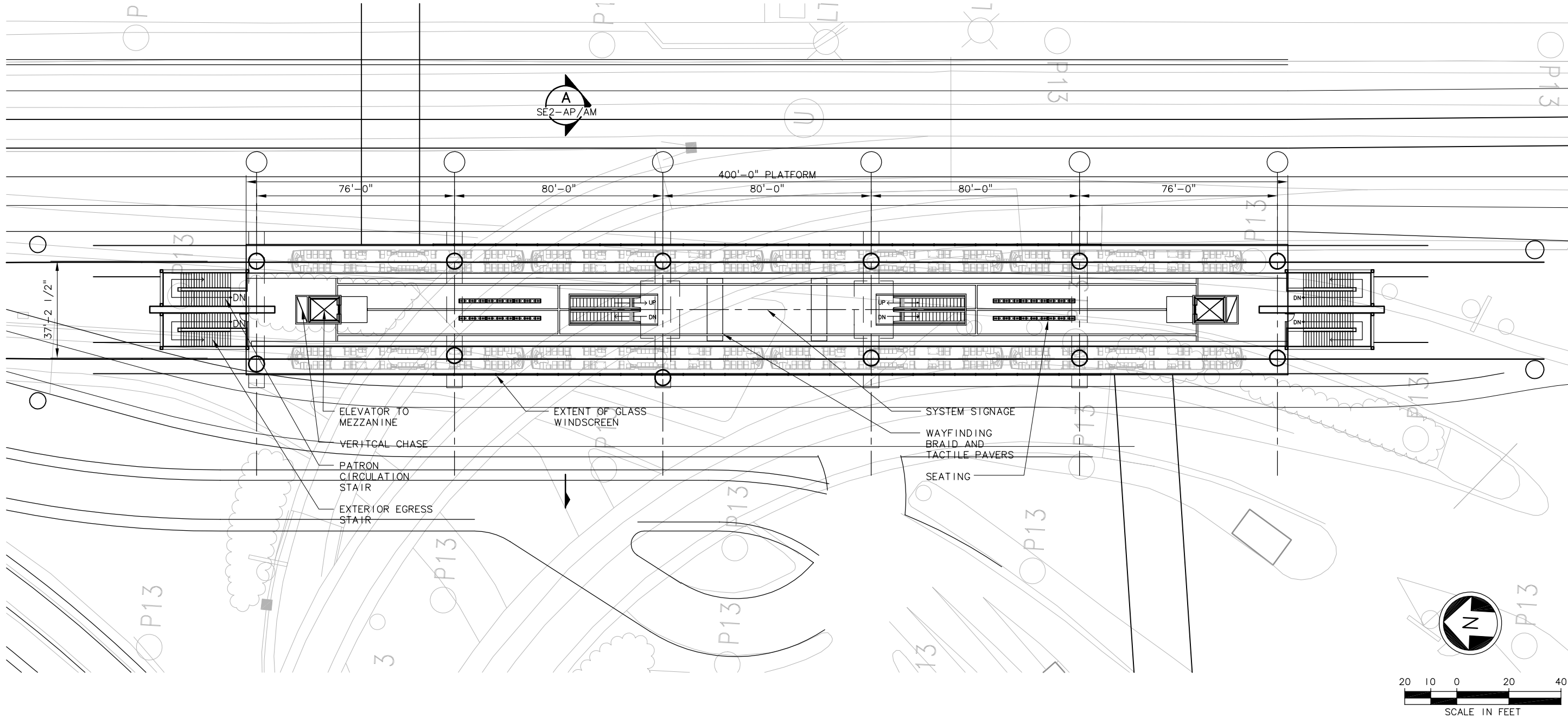


Date:

Scale:	1"=20'
Filename:	S70_SE2_AP01
Contract No.:	
Date:	01/20/05

LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
AIRPORT LINK
AIRPORT STATION
STATION PLATFORM LEVEL

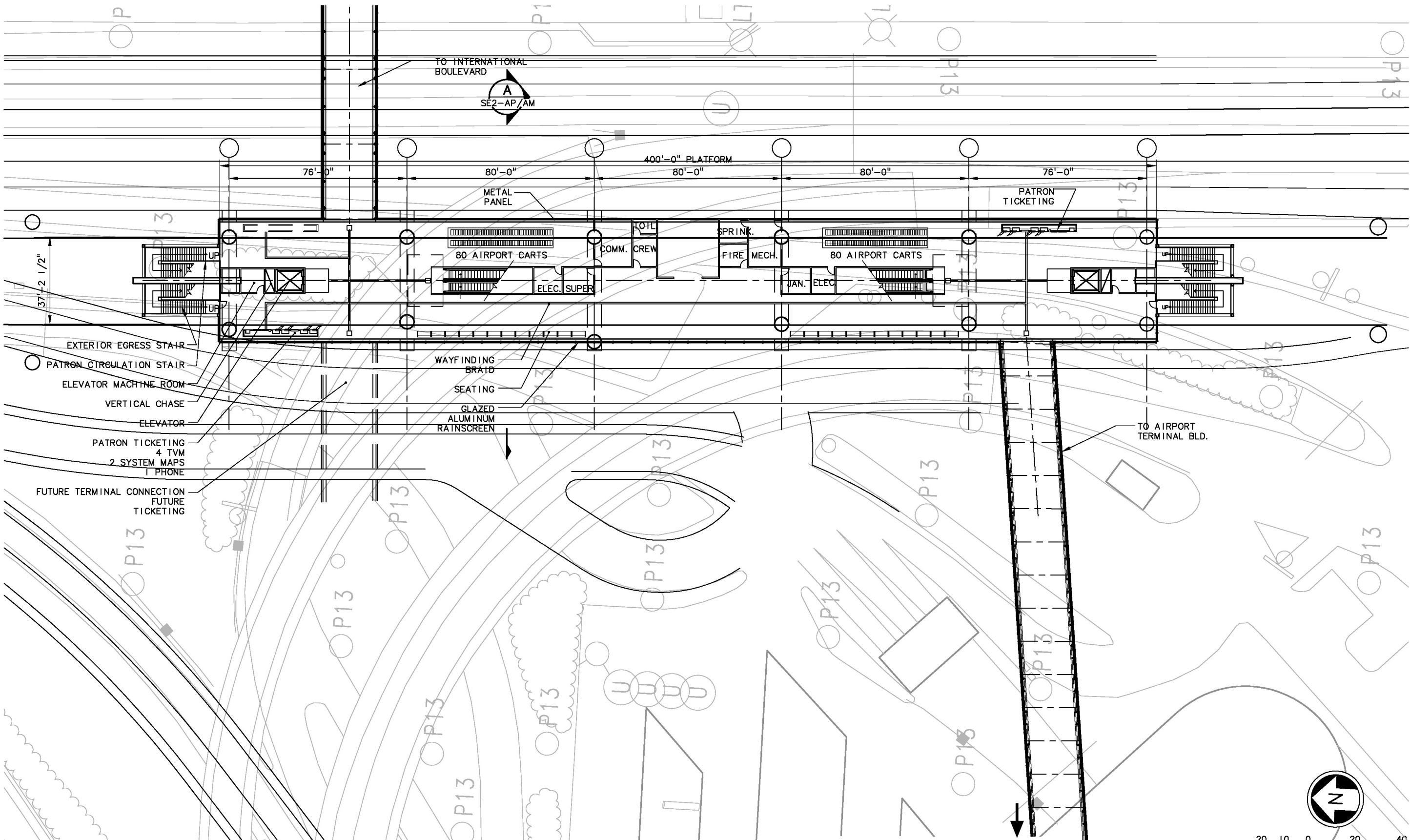
Drawing No.:	SE2-AP01
Sheet No.:	Rev.:



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ST/A03/3C34
ST_Enabling
s70_se3_ku
Unresolved

LTSCALE
1=1

SEE DWG SE2-KP03



C:\work\S70_SE2_AM01.dwg
04/18/05 11:18 : wigginst DEW3061

No.	Date	By	Chk.	App.	Revisions

Designed By:
A. ENGEL
Drawn By:
Checked By:
Approved By:

PRELIMINARY

HEWITT
ARCHITECTS

Submitted:

Date:

Approved:



Date:

Scale:
1"=20'
Filename:
S70_SE2_AM01
Contract No.:
Date:
01/20/05

LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
AIRPORT LINK
AIRPORT STATION
STATION MEZZANINE LEVEL

Drawing No.:
SE2-AM01
Sheet No.:
Rev.:

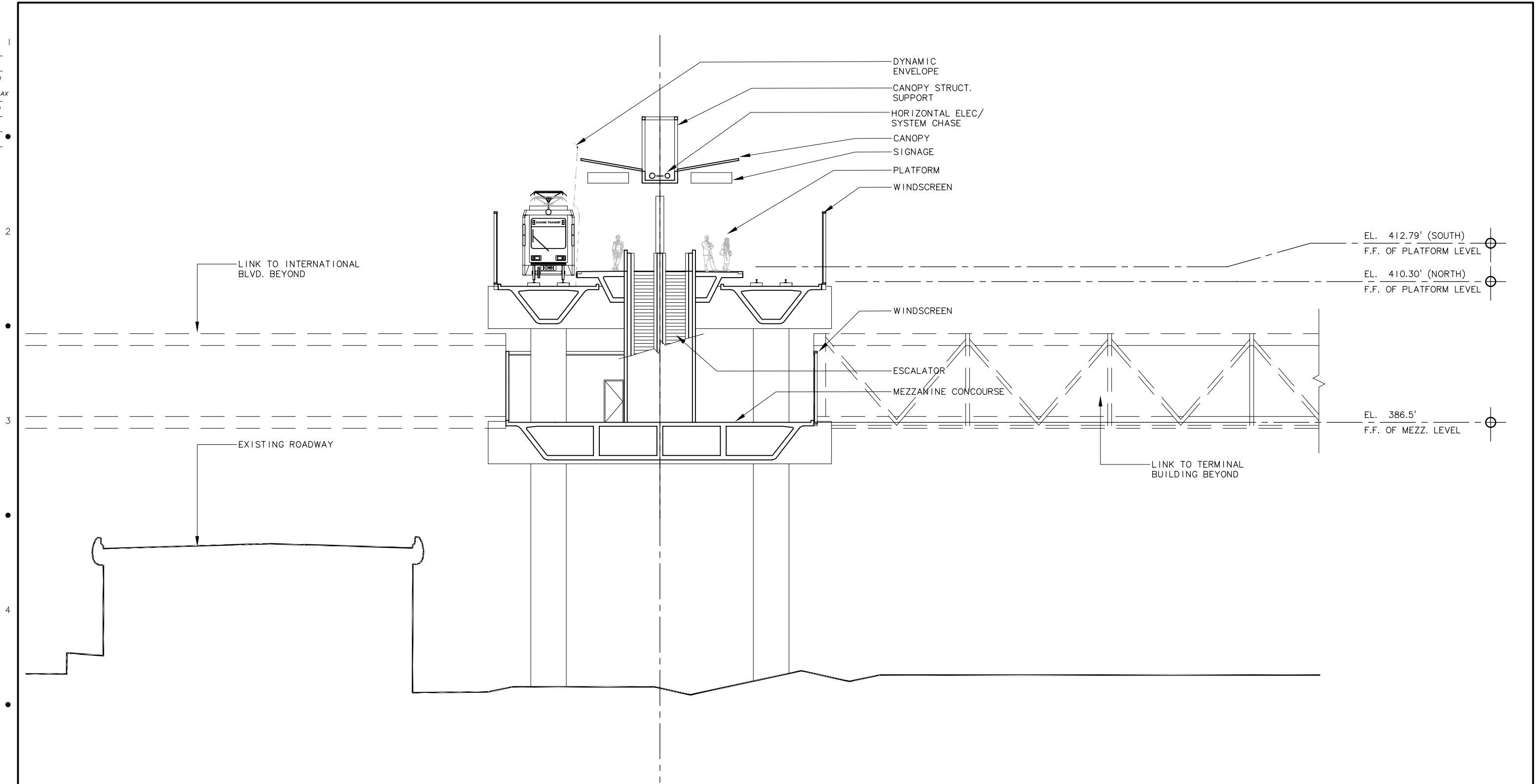
XREF'S

Resolved

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REG-PRE
S70_SE2_AX

Unresolved

LTSCALE
1=1



C:\work\S70_SE2_AX01.dwg
04/18/05 11:19 : wigginst DEW3061

No.	Date	By	Chk.	App.	Revisions

Designed By:
A. ENGEL
Drawn By:
Checked By:
Approved By:

PRELIMINARY

HEWITT
ARCHITECTS

Submitted: Date: Approved:

SOUNDTRANSIT

Scale: 1/8"=1'-0"
Filename: S70_SE2_AX01
Contract No.:
Date: 01/20/05

LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
AIRPORT LINK
AIRPORT STATION
TYPICAL SECTION

Drawing No.: SE2-AX01
Sheet No.: Rev.:

XREF'S
Resolved
ZG-2234H
ZG-SPRE
28EBASE
28PBASE
28PEXRW
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S80_N84_AG
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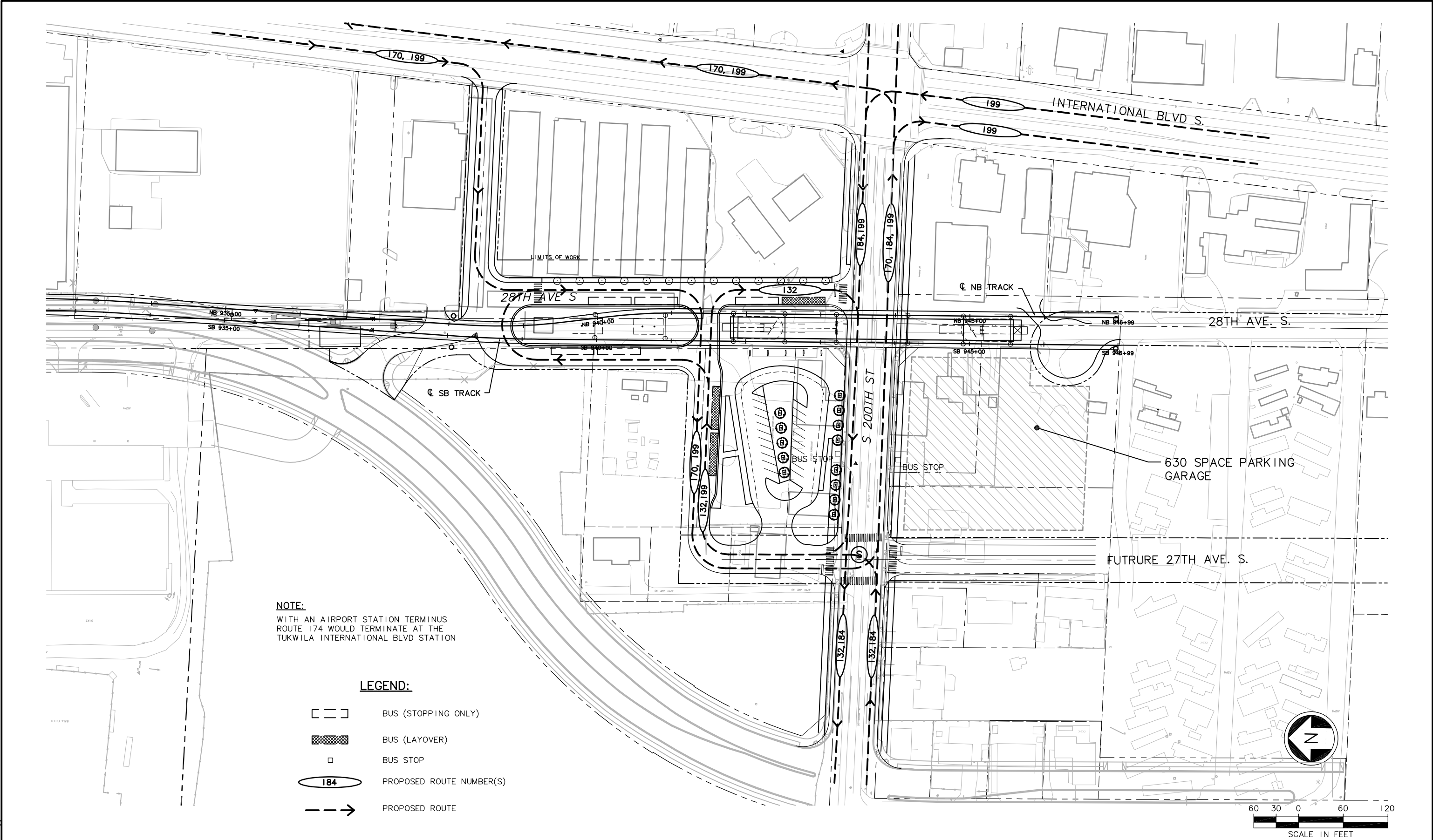
2

3

4

5

H:\work\S80_n84_ag01.dwg
05/11/05 10:30 : baileyj OEW3059



NOTE:
WITH AN AIRPORT STATION TERMINUS
ROUTE 174 WOULD TERMINATE AT THE
TUKWILA INTERNATIONAL BLVD STATION

LEGEND:

- BUS (STOPPING ONLY)
- BUS (LAYOVER)
- BUS STOP
- PROPOSED ROUTE NUMBER(S)
- PROPOSED ROUTE

No.	Date	Dsn.	Chk.	App.	Revisions

Designed By:
J. BAILEY
Drawn By:
J. BAILEY
Checked By:
Approved By:

PRELIMINARY



Submitted:

Date:

Approved:



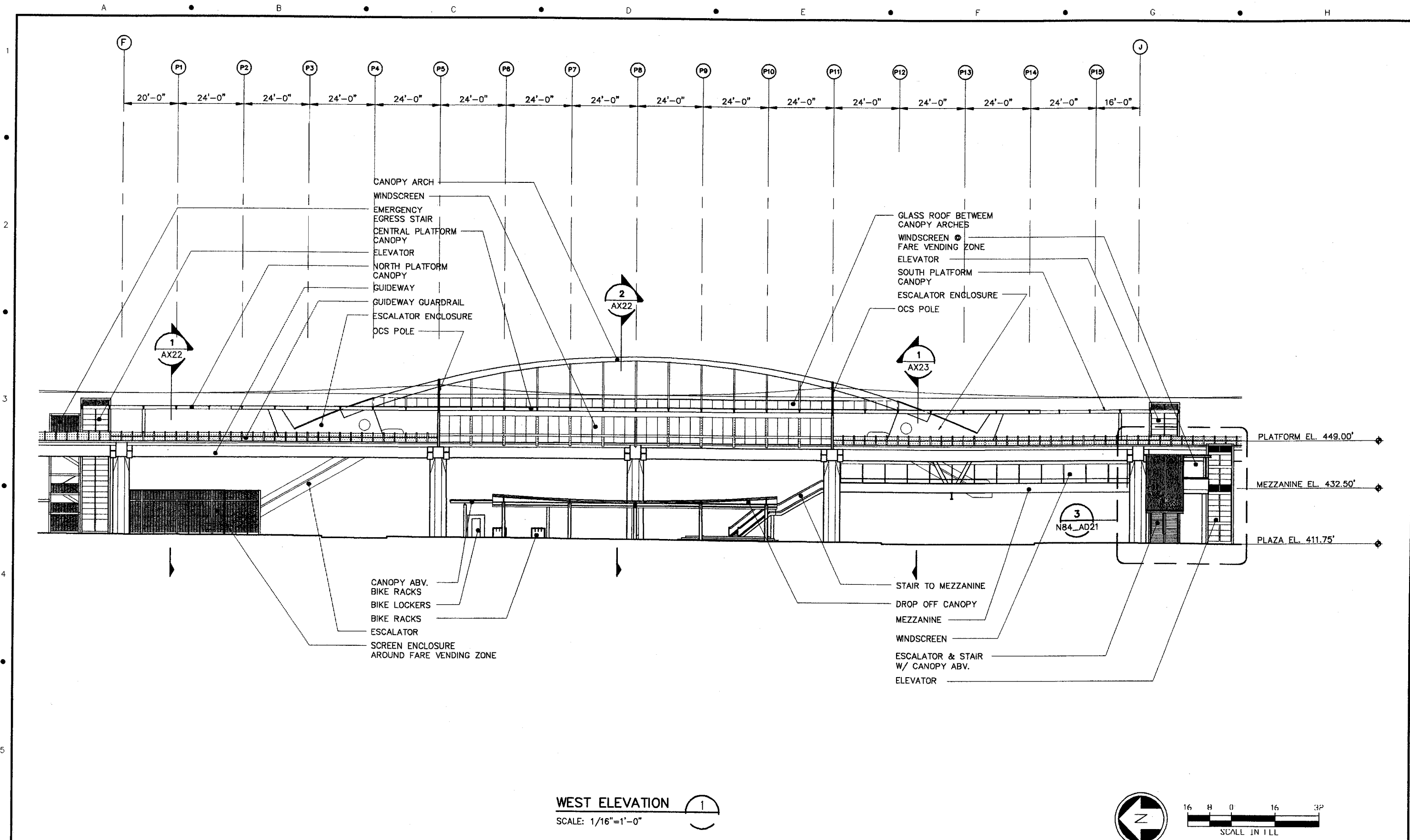
Date:

Scale:
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Contract No.:
DS 780
Date:

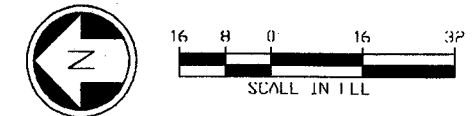
LINK LIGHT RAIL PROJECT
SOUTH CORRIDOR
SEGMENT DS780
200th STREET STATION
SITE PLAN

Drawing No.:
N84-AG01
Sheet No.:
Rev.:

P:\9903\Drawings\Sheets\S80_N84_AE10.dwg, 08/21/00 05:37:41 PM, PatrickD

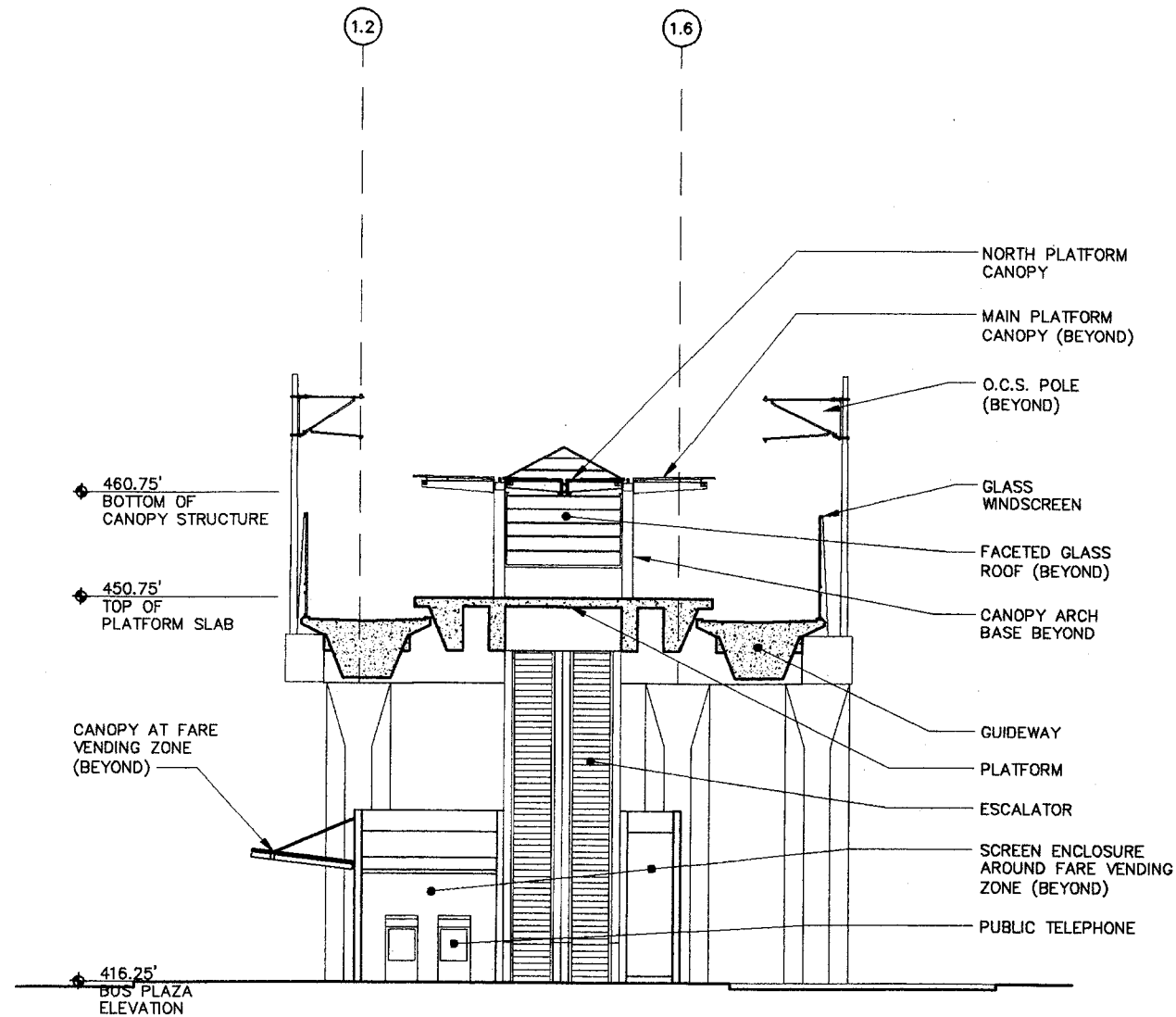


WEST ELEVATION
SCALE: 1/16"=1'-0"



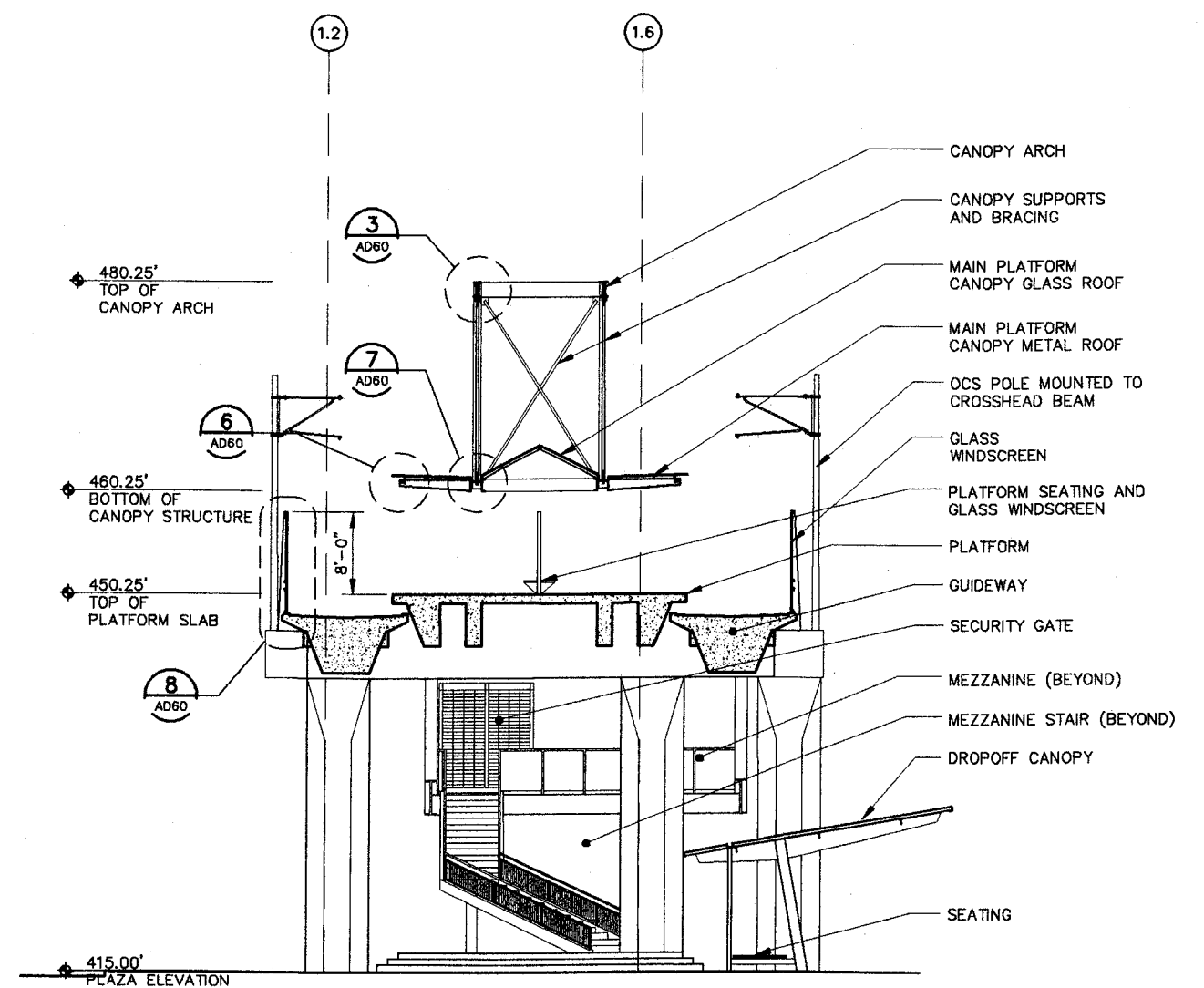
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						Drawn By:					Filename: S80_N84_AE10			Sheet No.:
						Checked By:					Contract No.:			Rev.:
						Approved By:					S780			
No.	Date	By	Chk.	App.	Revisions	Submitted:	Date:	Approved:	Date:	Date:	08/18/00	200TH STREET SOUTH STATION STATION ELEVATIONS		

P:\19903\Drawings\Sheets\S80_N84_AX22.dwg, 08/22/00 10:26:43 AM, Jonah



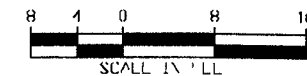
CROSS SECTION

SCALE: 1/8"=1'-0"



CROSS SECTION

SCALE: 1/8"=1'-0"



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C.2 Roadway Elements of Airport Link

DRAWING DIRECTORY

This appendix highlights roadway projects associated with Airport Link that would extend from International Boulevard near S. 176th Street to S. 160th Street. Below are general descriptions of drawing vicinities.

Plan view of project area from S. 176th to S. 160th Street.

RW1: Along International Boulevard north of S. 176th Street.

RW2: Along International Boulevard south of S. 170th Street.

RW3: Between the existing North Airport Expressway and International Boulevard, south and north of S. 170th Street.

RW4: Between Air Cargo Road and the Washington Memorial Park Cemetery, south and north of the expressway on- and off-ramps from Air Cargo Road.

RW5: Between Air Cargo Road and the Washington Memorial Park Cemetery, near S. 164th Street.

RW6: Between Air Cargo Road and 28th Avenue S., south of S. 160th Street.

RW7: Typical roadway cross sections near the North Airport Expressway (NAE).

RW8: Typical roadway cross sections near the North Airport Expressway (NAE).

RW9: Typical roadway cross sections near the North Airport Expressway (NAE).

PR1: Project area profile north of S. 176th Street.

PR2: Project area profile south of S. 170th Street.

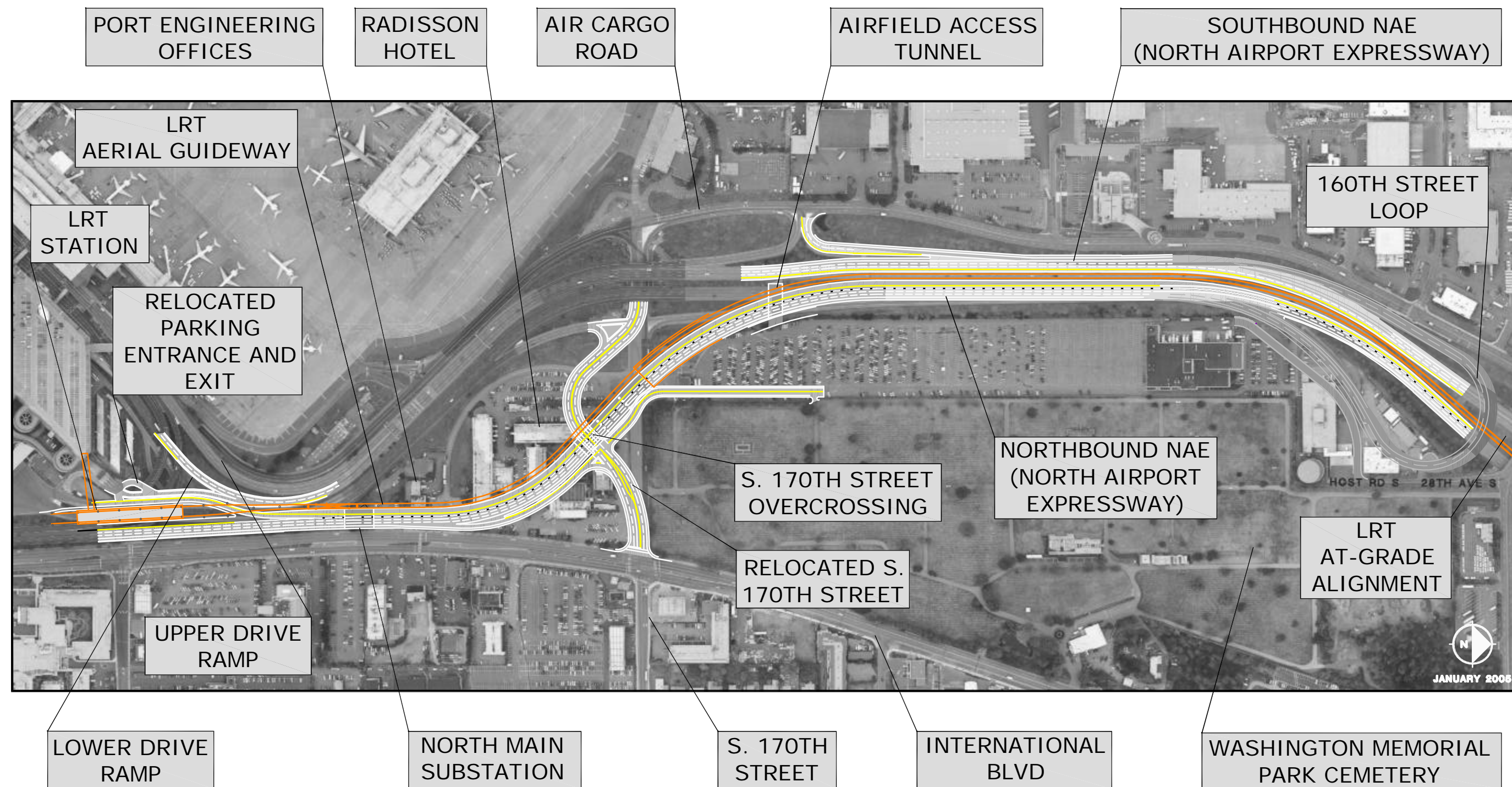
PR3: Project area profile south and north of S. 170th Street.

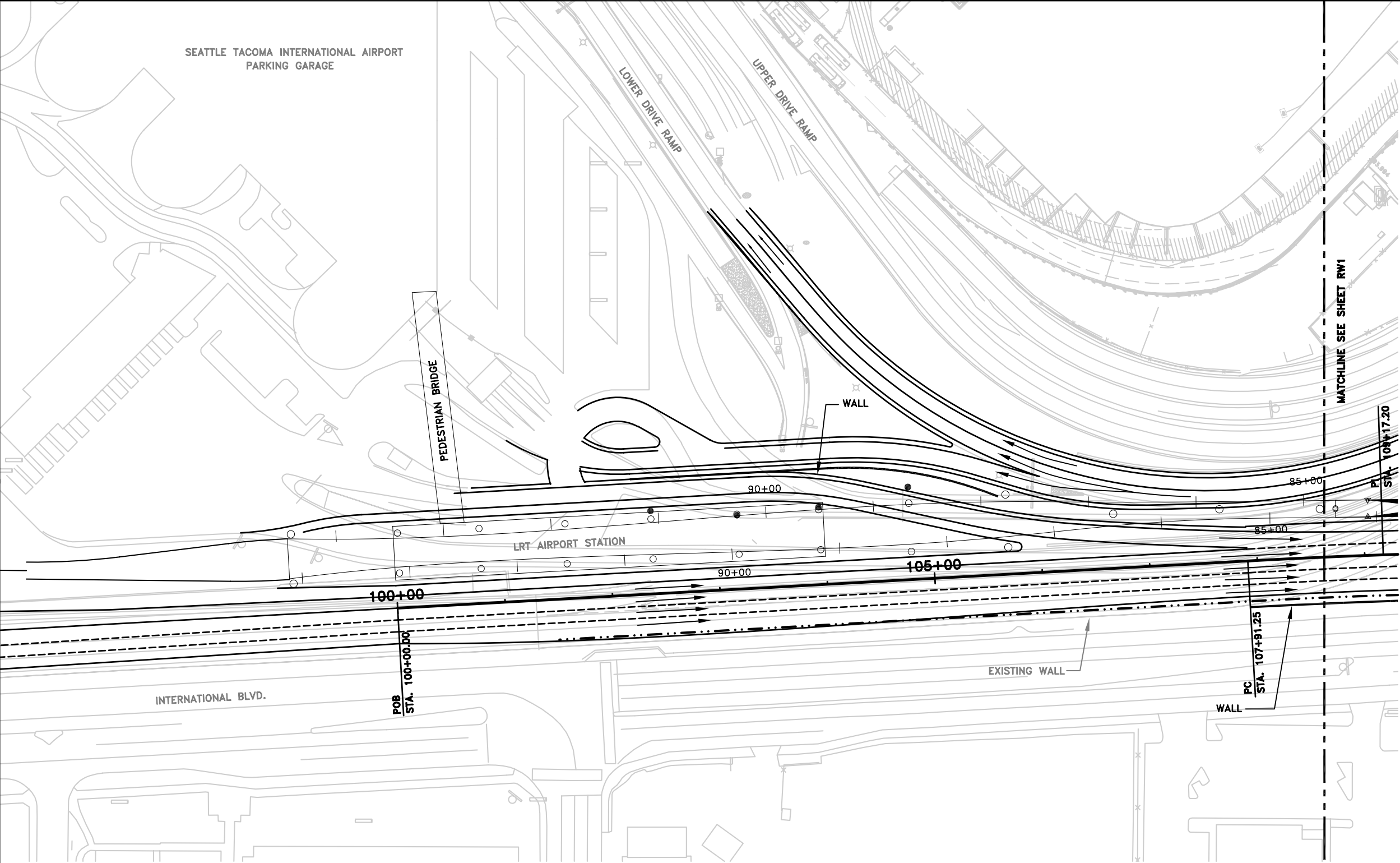
PR4: Project area profile south and north of the North Airport Expressway on- and off-ramps from Air Cargo Road.

PR5: Project area profile near S. 164th Street.

PR6: Project area profile south of S. 160th Street.

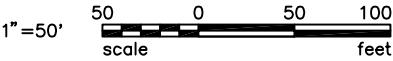
PR7: Roadway profile at S. 170th Street.





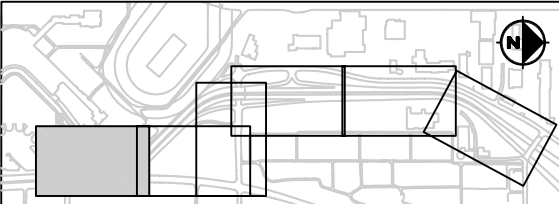
LEGEND

- FUTURE UTILITY CORRIDOR
- RIGHT OF WAY
- EXISTING FENCE
- RETAINING WALLS
- EXISTING SIGN
- LRT SUPPORT COLUMN
- TRAVEL LANE



PLAN
ROADWAY ALIGNMENT
SCALE: 1" = 50'

KEY MAP



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SCALE:
DATE: JANUARY 31, 2005
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REVISIONS									
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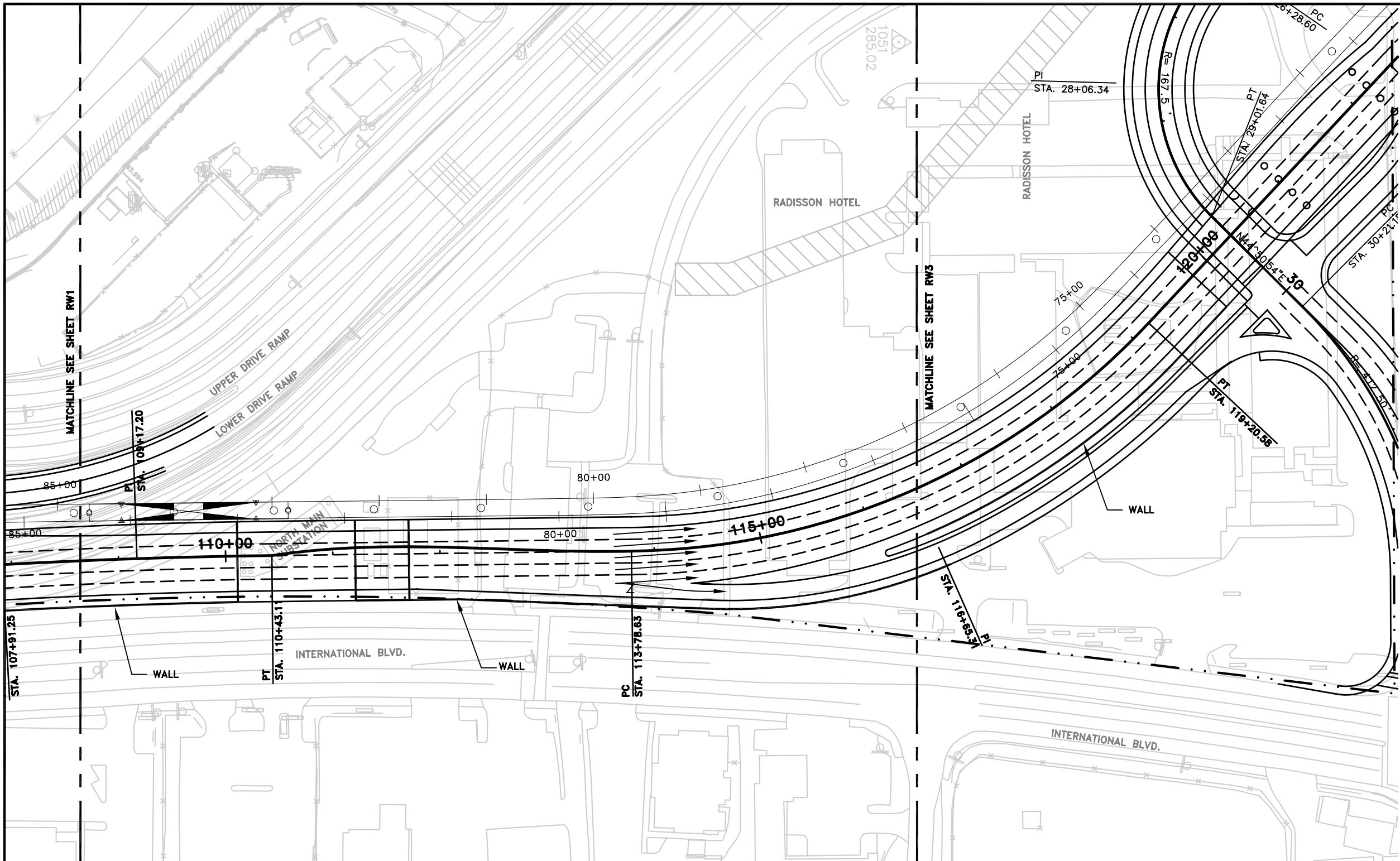
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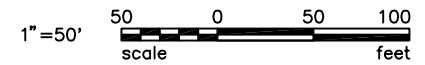
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NORTH AIRPORT EXPRESSWAY (NAE)**

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PORT OF SEATTLE NO.

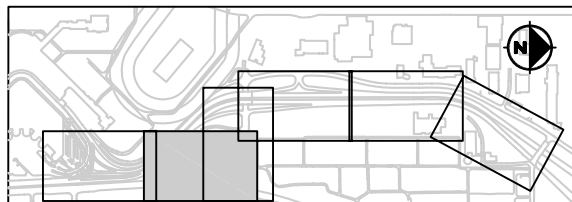


LEGEND	
	FUTURE UTILITY CORRIDOR
	RIGHT OF WAY
	EXISTING FENCE
	RETAINING WALLS
	EXISTING SIGN
	LRT SUPPORT COLUMN
	TRAVEL LANE



PLAN
ROADWAY ALIGNMENT
SCALE: 1"=50'

KEY MAP



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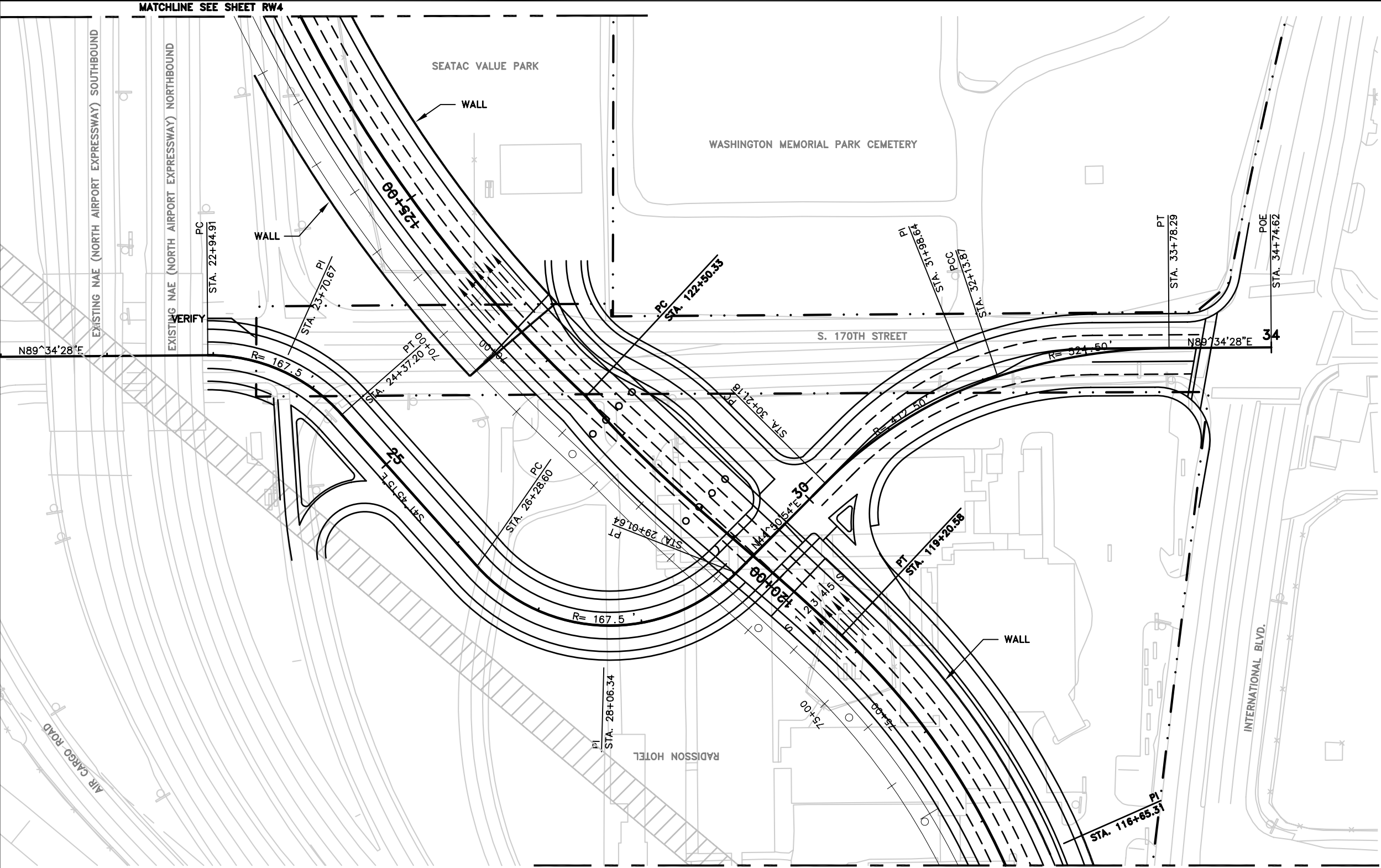
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WORK ORDER NO.
CONSULTANT'S NO. RW2
PORT OF SEATTLE NO.



LEGEND

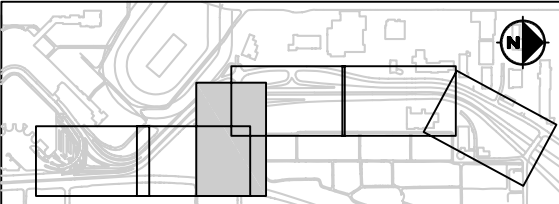
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- RIGHT OF WAY
- EXISTING FENCE
- RETAINING WALLS
- EXISTING SIGN
- LRT SUPPORT COLUMN
- TRAVEL LANE



PLAN
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SCALE: 1"=50'



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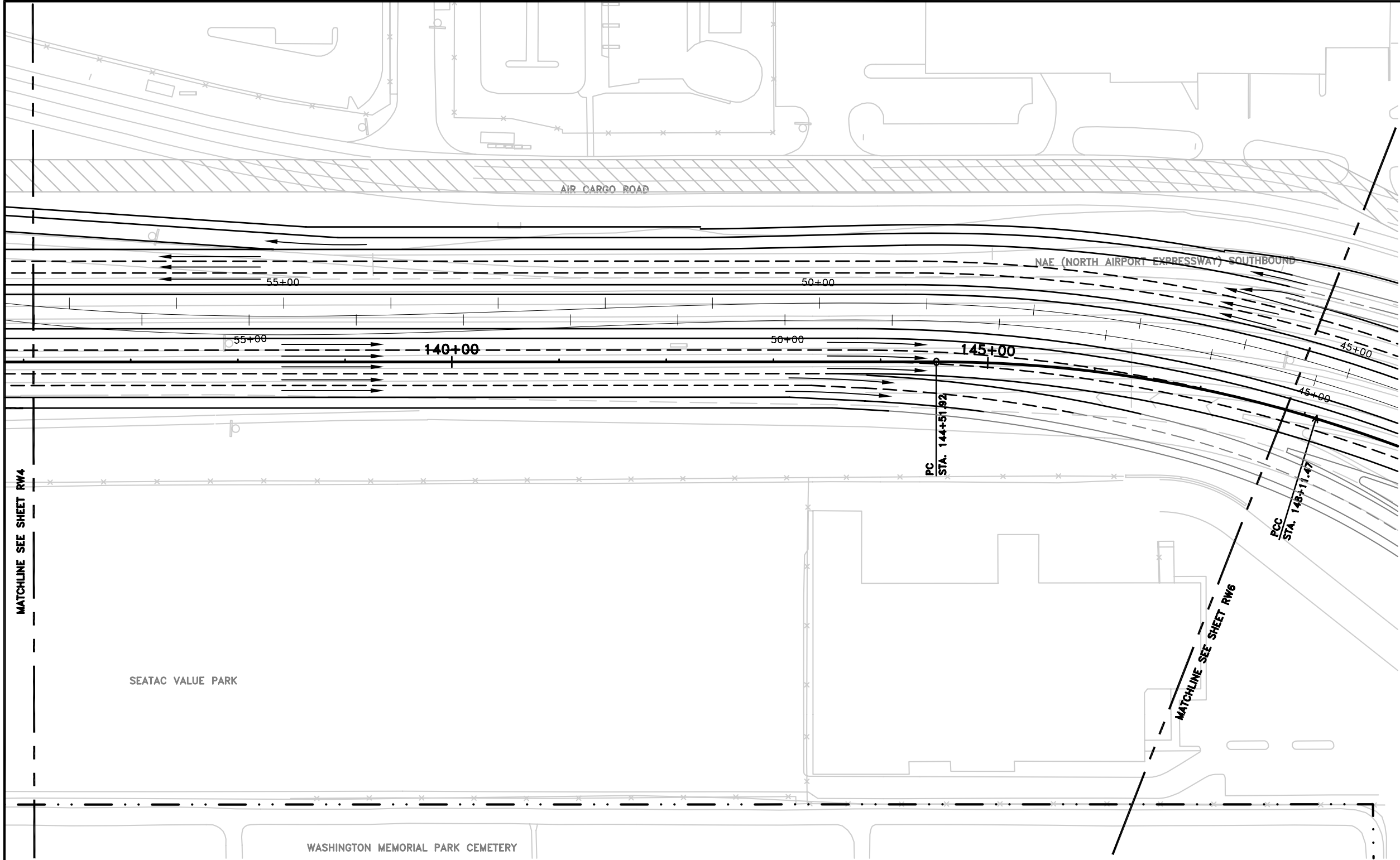
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SHEET TITLE: **ROADWAY ALIGNMENT NORTH AIRPORT EXPRESSWAY (NAE)**

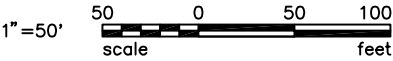
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CONSULTANT'S NO. RW3
PORT OF SEATTLE NO.



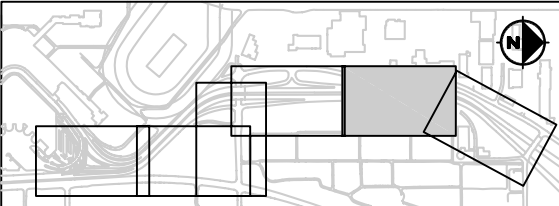
LEGEND

-  FUTURE UTILITY CORRIDOR
-  RIGHT OF WAY
-  EXISTING FENCE
-  RETAINING WALLS
-  EXISTING SIGN
-  LRT SUPPORT COLUMN
-  TRAVEL LANE

PLAN
ROADWAY ALIGNMENT
SCALE: 1"=50'



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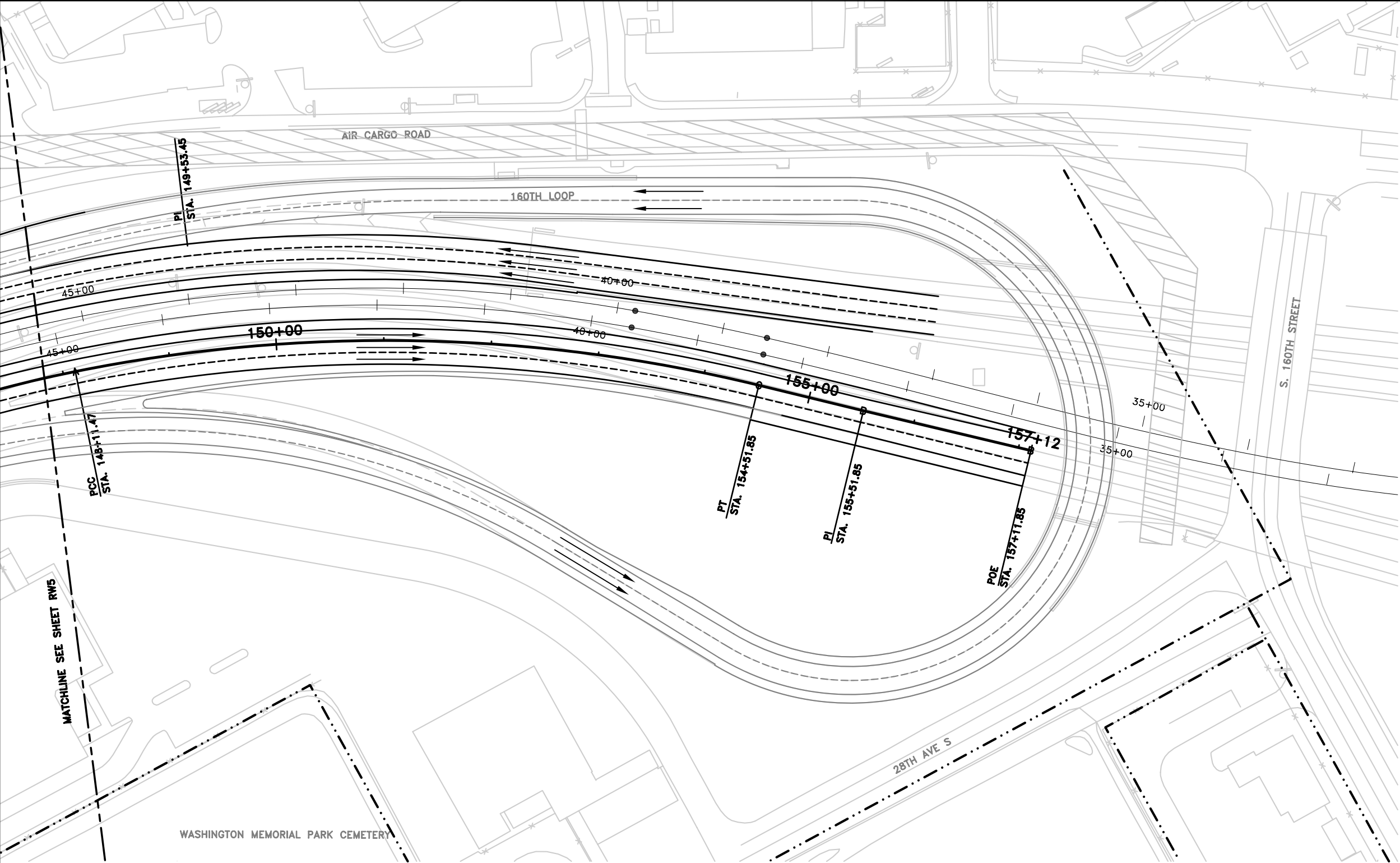
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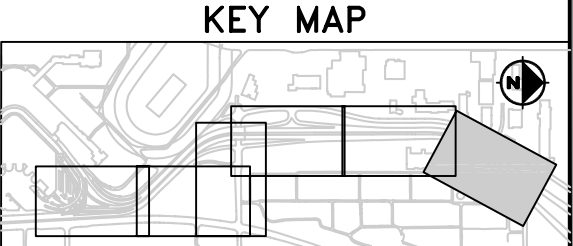
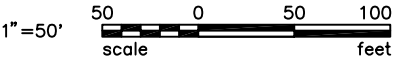
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PROJECT: **SOUND TRANSIT LRT AND AIRPORT
STATION - ENABLING PROJECT**
SHEET TITLE: **ROADWAY ALIGNMENT -
NORTH AIRPORT EXPRESSWAY (NAE)**

WORK ORDER NO.
CONSULTANT'S NO.
RW5
PORT OF SEATTLE NO.



- LEGEND**
- FUTURE UTILITY CORRIDOR
 - RIGHT OF WAY
 - EXISTING FENCE
 - RETAINING WALLS
 - EXISTING SIGN
 - LRT SUPPORT COLUMN
 - TRAVEL LANE

PLAN
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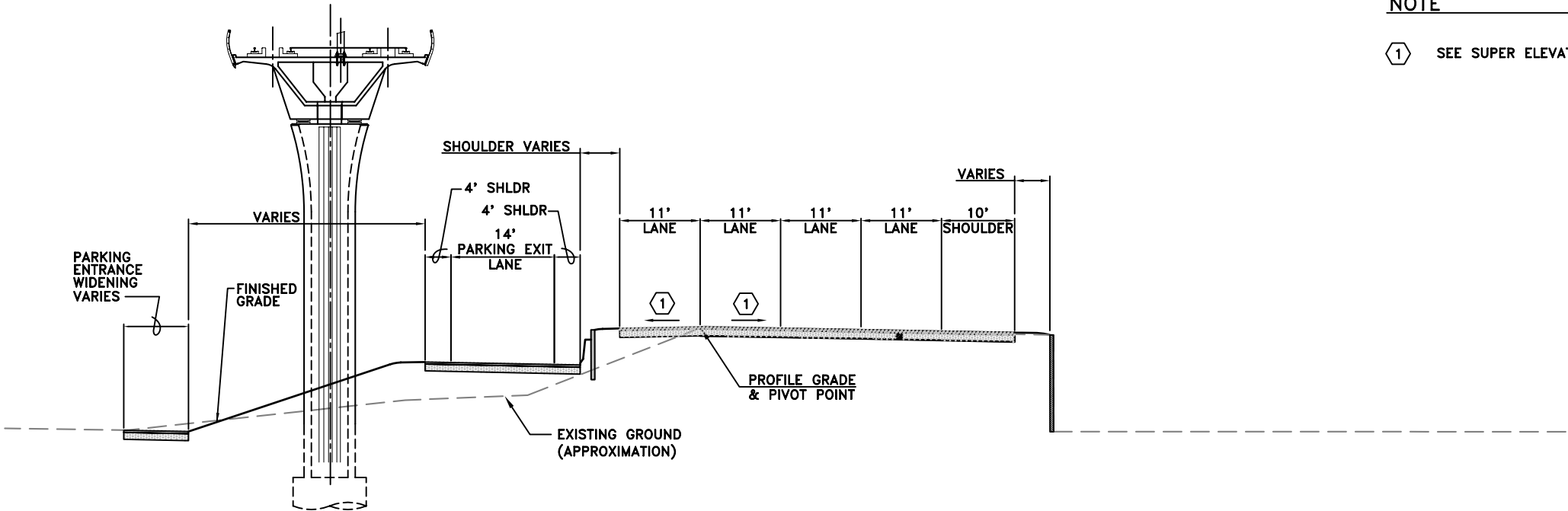
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PROJECT: **SOUND TRANSIT LRT AND AIRPORT**
STATION - ENABLING PROJECT
SHEET TITLE: **ROADWAY ALIGNMENT**
NORTH AIRPORT EXPRESSWAY (NAE)

WORK ORDER NO.
CONSULTANT'S NO.
RW6
PORT OF SEATTLE NO.

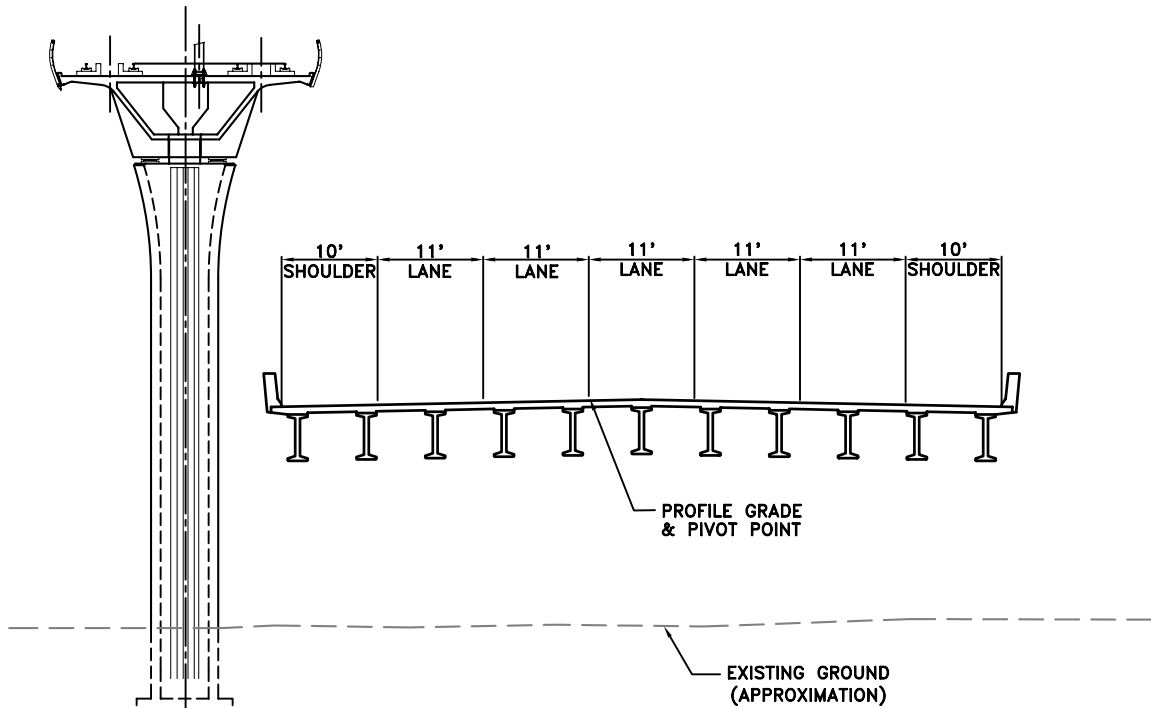
NOTE _____

1 SEE SUPER ELEVATIONS DIAGRAM.



SECTION
NB NAE STA 100+75 TO NB NAE STA 110+11
SCALE: NTS
(SHOWN AT STA 106+66)

A
RW7



SECTION
NB NAE STA 110+11 TO NB NAE STA 111+21
SCALE: NTS
(SHOWN AT MID SPAN SUBSTATION)

B
RW7

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SCALE:
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NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

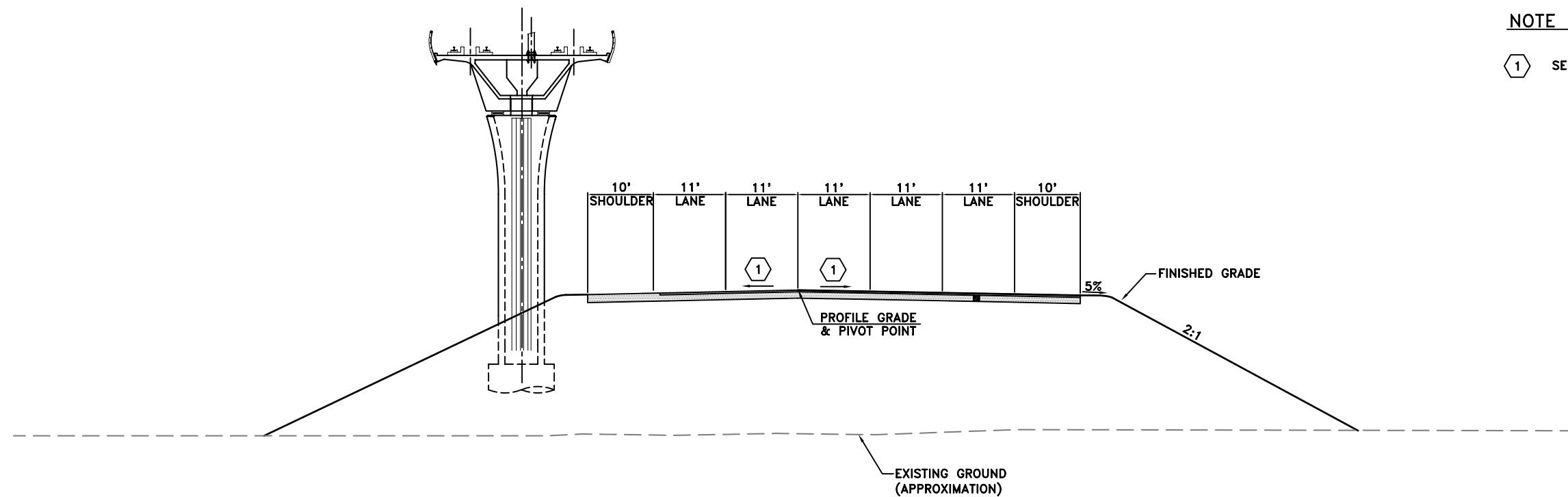
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SEA-TAC INTERNATIONAL AIRPORT
PROJECT: **SOUND TRANSIT LRT AND AIRPORT
STATION - ENABLING PROJECT**
SHEET TITLE: **ROADWAY TYPICAL SECTIONS -
NORTH AIRPORT EXPRESSWAY (NAE)**

WORK ORDER NO.
CONSULTANT'S NO.
RW7
PORT OF SEATTLE NO.

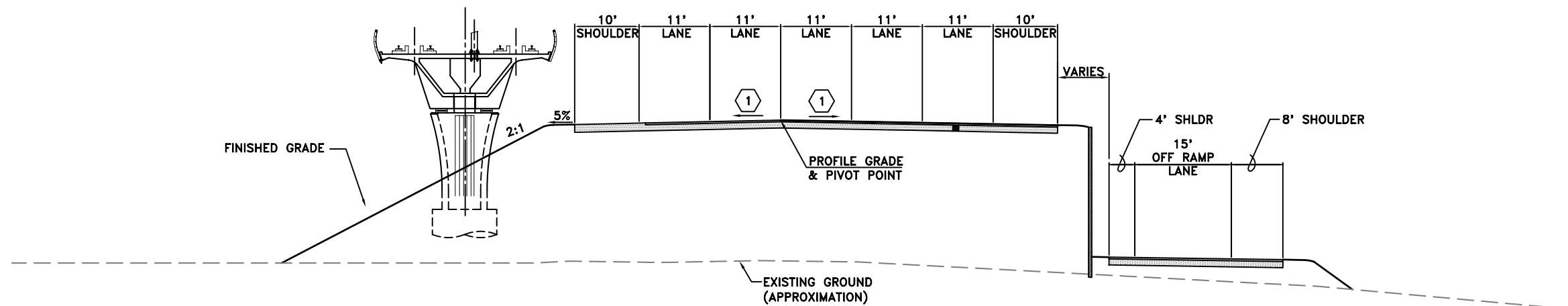
NOTE

1 SEE SUPER ELEVATIONS DIAGRAM.



SECTION
NB NAE STA 111+21 TO NB NAE STA 114+32
SCALE: NTS
(SHOWN AT STA 111+55)

C
RW8



SECTION
NB NAE STA 114+32 TO NB NAE STA 119+82
SCALE: NTS
(SHOWN AT STA 119+00)

D
RW8

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The HNTB Companies
Engineers Architects Planners
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Bellevue, Washington 98004
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PROJECT ENGR./ARCH:
DESIGNER:
DRAWN BY:
SCALE:
DATE:
JANUARY 31, 2005
CHECKED BY:
APPROVED BY:

REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

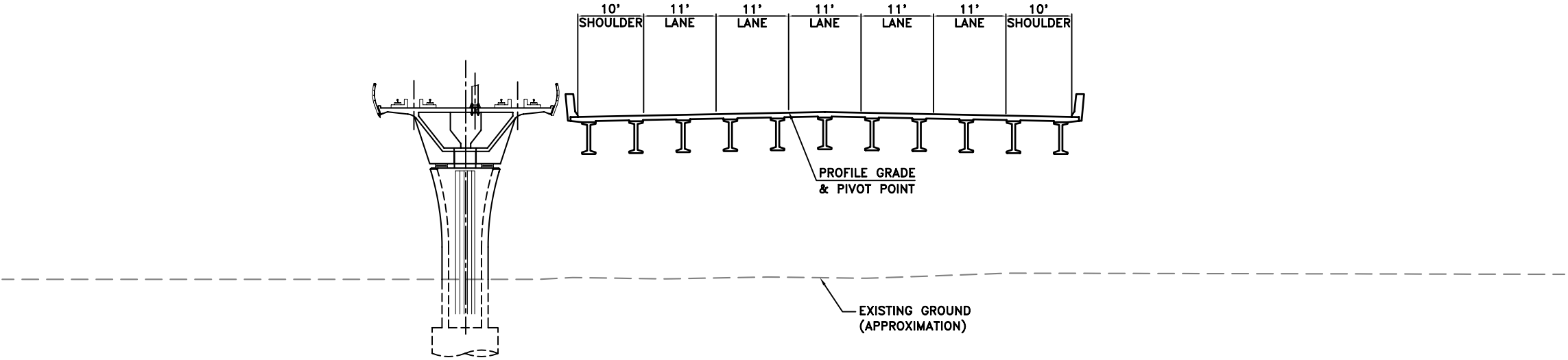
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SCALE:
DATE:
CHECKED BY:
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Port of Seattle
SEA-TAC INTERNATIONAL AIRPORT
PROJECT: **SOUND TRANSIT LRT AND AIRPORT
STATION - ENABLING PROJECT**
SHEET TITLE: **ROADWAY TYPICAL SECTIONS -
NORTH AIRPORT EXPRESSWAY (NAE)**

WORK ORDER NO.
CONSULTANT'S NO.
RW8
PORT OF SEATTLE NO.

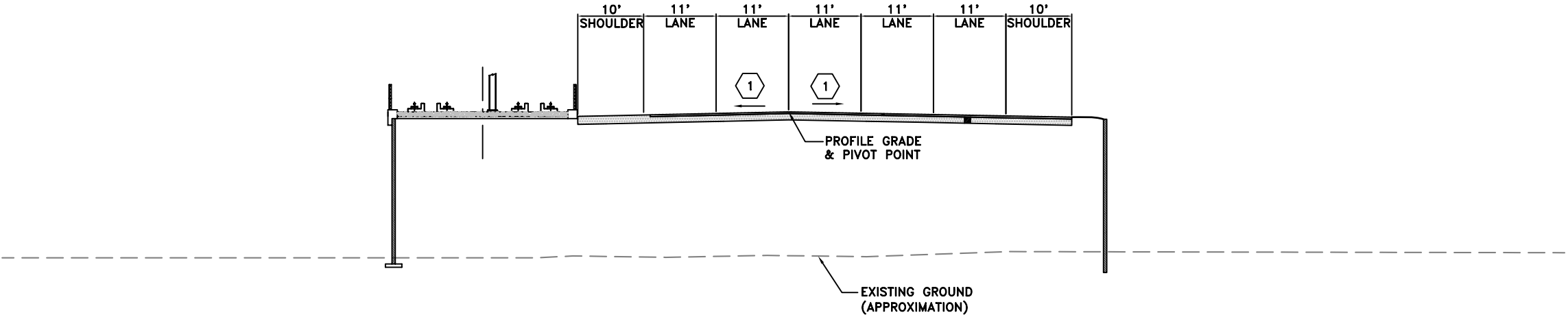
NOTE

1 SEE SUPER ELEVATIONS DIAGRAM.



SECTION
NB NAE STA 119+82 TO NB NAE STA 123+42
SCALE: NTS
(SHOWN AT MID SPAN S 170TH)

E
RW9



SECTION
NB NAE STA 123+42 TO NB NAE STA 133+04
SCALE: NTS
(SHOWN AT STA 125+00)

F
RW9

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SCALE:
DATE: JANUARY 31, 2005
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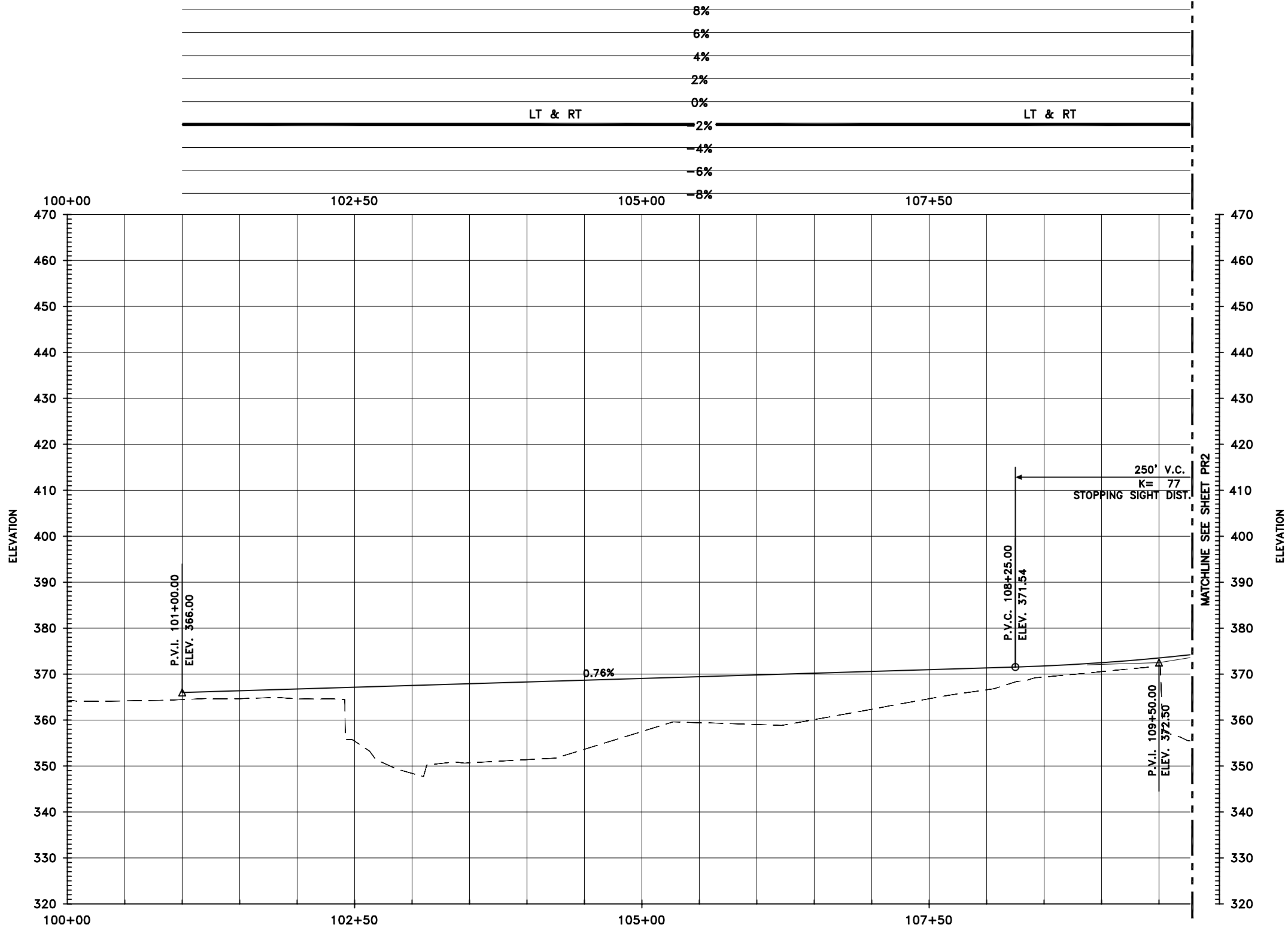
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APPROVED BY:

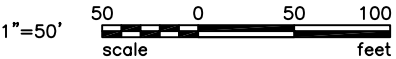


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PROJECT: **SOUND TRANSIT LRT AND AIRPORT
STATION - ENABLING PROJECT**
SHEET TITLE: **ROADWAY TYPICAL SECTIONS -
NORTH AIRPORT EXPRESSWAY (NAE)**

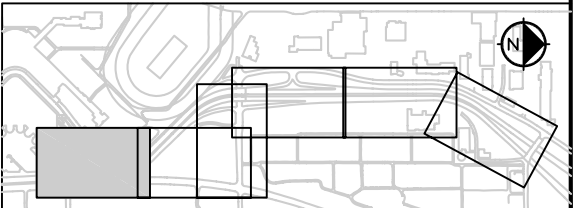
WORK ORDER NO.
CONSULTANT'S NO. RW9
PORT OF SEATTLE NO.



PROFILE
ROADWAY PROFILE
SCALE: 1"=50'



KEY MAP



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SCALE:

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PROGRAM MANAGER:

DESIGN ENGINEER:

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SCALE:

DATE:

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Port of Seattle
SEA-TAC INTERNATIONAL AIRPORT

PROJECT: SOUND TRANSIT LRT AND AIRPORT STATION -
ENABLING PROJECT

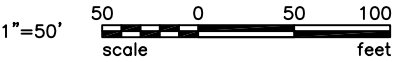
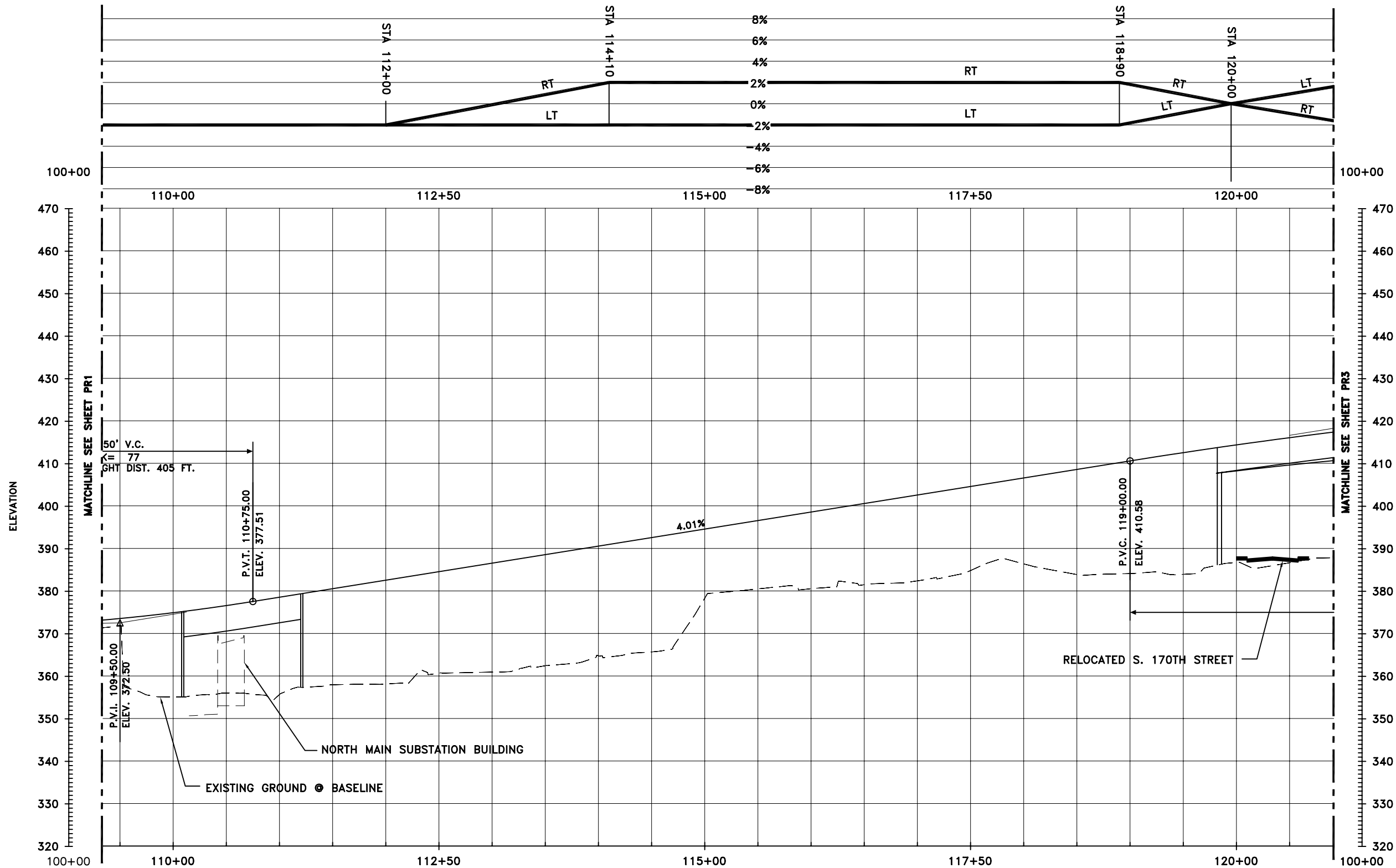
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WORK ORDER NO.

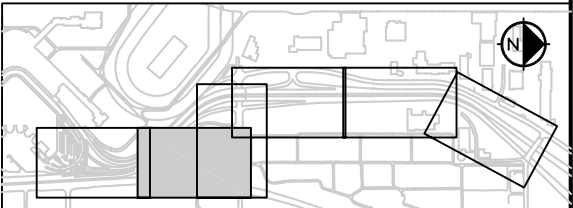
CONSULTANT'S NO.

PR1

PORT OF SEATTLE NO.



KEY MAP



PROFILE
ROADWAY PROFILE
SCALE: 1"=50'

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PROJECT ENGR./ARCH:
DESIGNER:
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SCALE:
DATE:
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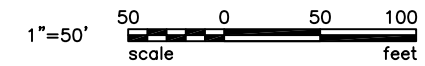
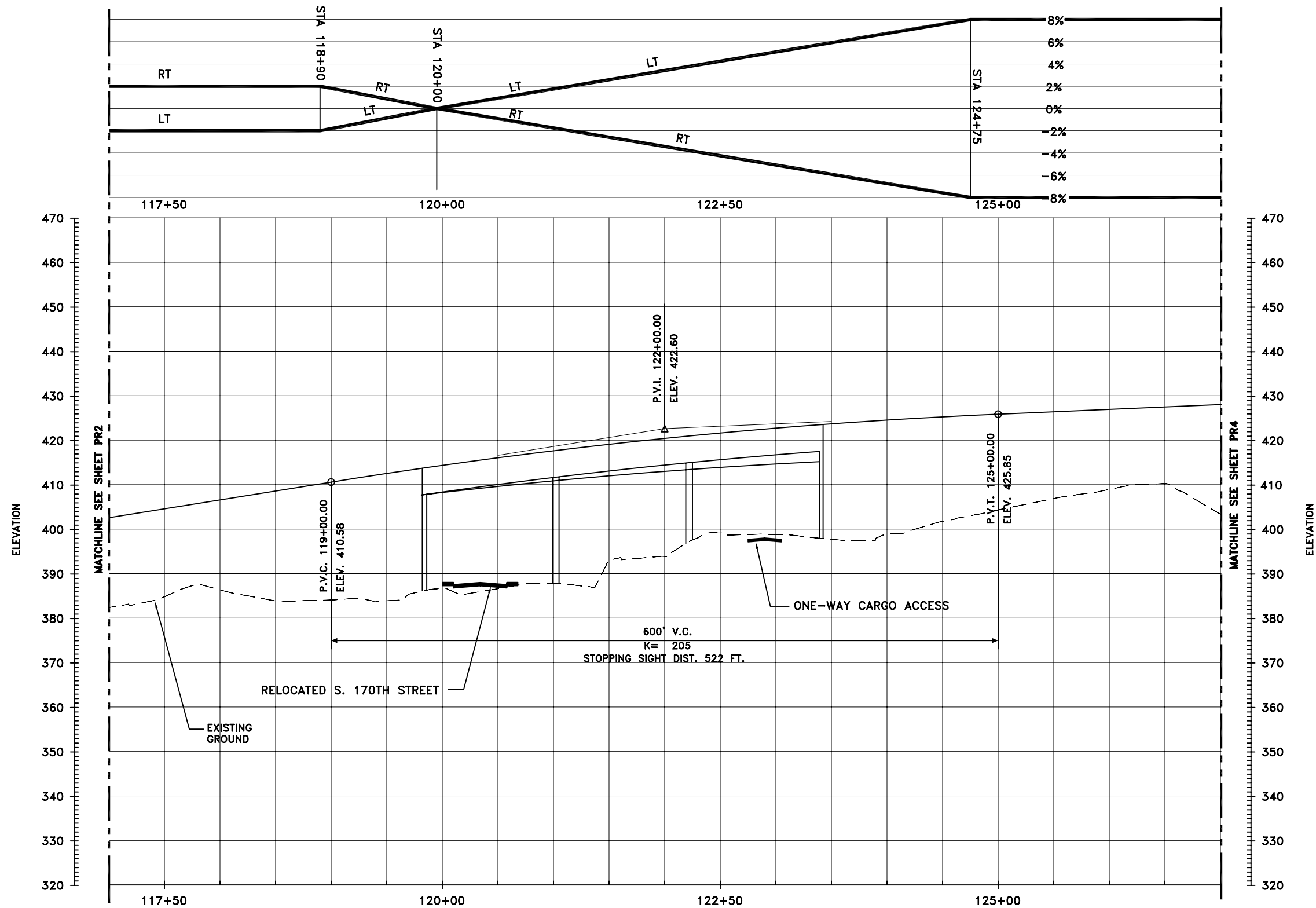
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DATE:
CHECKED BY:
APPROVED BY:

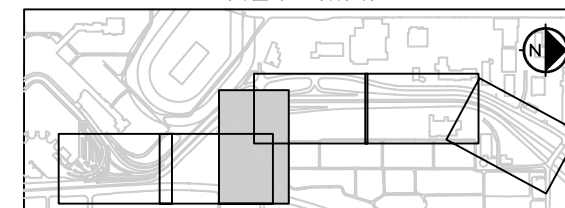


Port of Seattle
SEA-TAC INTERNATIONAL AIRPORT
PROJECT: SOUND TRANSIT LRT AND AIRPORT STATION -
ENABLING PROJECT
SHEET TITLE: ROADWAY PROFILE

WORK ORDER NO.
CONSULTANT'S NO.
PR2
PORT OF SEATTLE NO.



KEY MAP



PROFILE
 ROADWAY PROFILE
 SCALE: 1"=50'



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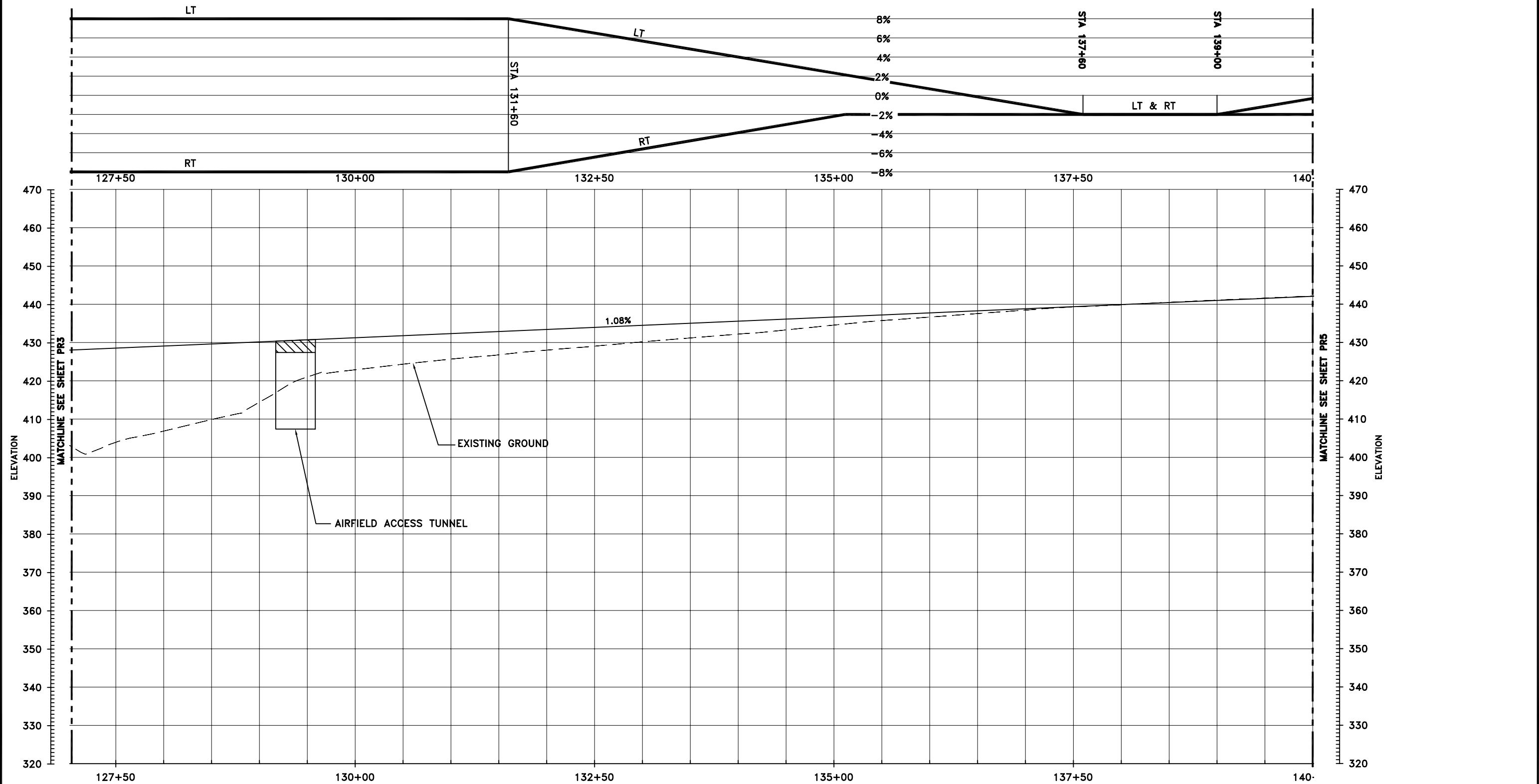
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 DRAWN BY:
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 DATE:
 JANUARY 31, 2005
 CHECKED BY:
 APPROVED BY:

REVISIONS									
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PROGRAM MANAGER:
 DESIGN ENGINEER:
 DRAWN BY:
 SCALE:
 DATE:
 CHECKED BY:
 APPROVED BY:


Port of Seattle
 SEA-TAC INTERNATIONAL AIRPORT
 PROJECT: SOUND TRANSIT LRT AND AIRPORT STATION –
 ENABLING PROJECT
 SHEET TITLE: ROADWAY PROFILE

WORK ORDER NO.
 CONSULTANT'S NO.
PR3
 PORT OF SEATTLE NO.



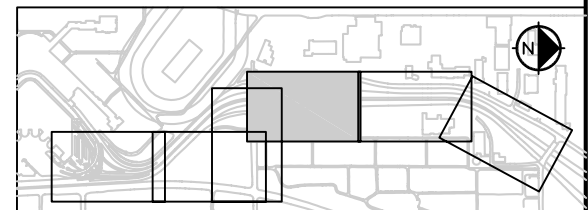
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KEY MAP

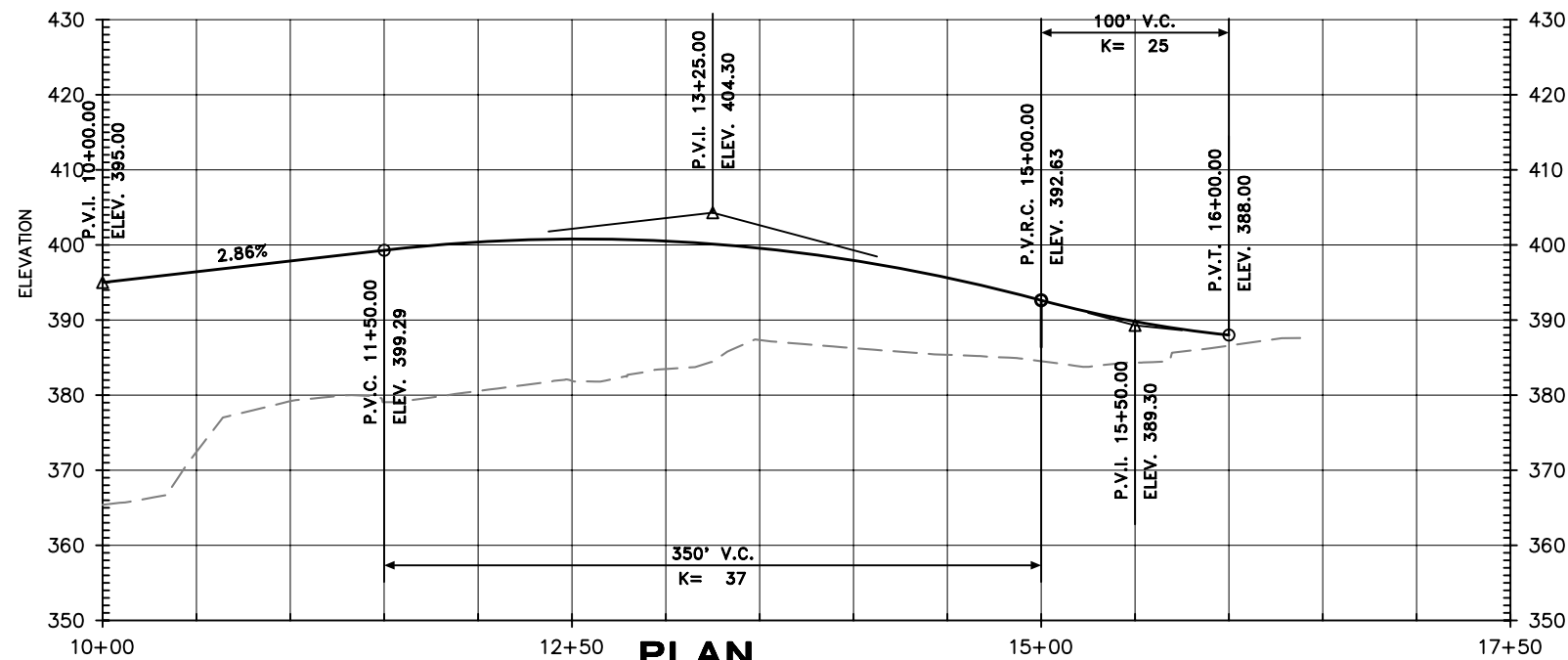
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PROFILE
ROADWAY PROFILE
SCALE: 1"=50'

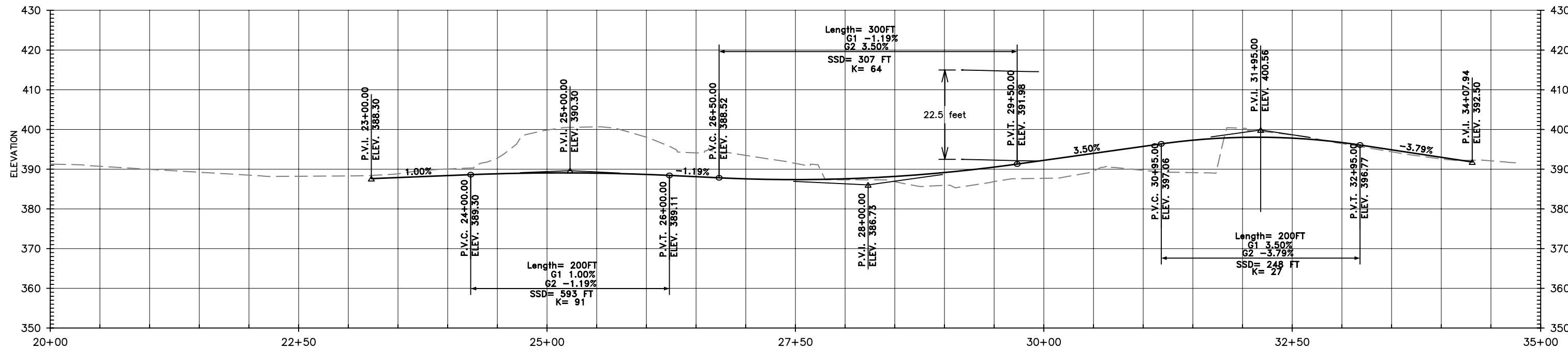
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scale feet



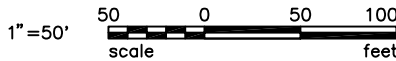
HNTB HNTB CORPORATION The HNTB Companies Engineers Architects Planners 600 108th Avenue, North East Bellevue, Washington 98004 PH (425) 455-3555 FAX (425) 453-9179	PROJECT ENGR./ARCH:	REVISIONS										PROGRAM MANAGER:	 SEA-TAC INTERNATIONAL AIRPORT PROJECT: SOUND TRANSIT LRT AND AIRPORT STATION - ENABLING PROJECT SHEET TITLE: ROADWAY PROFILE	WORK ORDER NO.
	DESIGNER:											DESIGN ENGINEER:		CONSULTANT'S NO. PR4
	DRAWN BY:											DRAWN BY:		
	SCALE:											SCALE:		
	DATE: JANUARY 31, 2005											DATE:		
CHECKED BY:											CHECKED BY:		PORT OF SEATTLE NO.	
APPROVED BY:											APPROVED BY:			



PLAN
OFF-RAMP TO S. 170TH
STREET
SCALE: 1" = 50'



PLAN
RELOCATED S. 170TH
STREET
SCALE: 1" = 50'



KEY MAP



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NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

PROGRAM MANAGER:
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 **Port of Seattle**
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PROJECT: **SOUND TRANSIT LRT AND AIRPORT**
STATION - **ENABLING PROJECT**
SHEET TITLE: **ROADWAY PROFILES**
S. 170TH STREET

WORK ORDER NO.
CONSULTANT'S NO.
PR7
PORT OF SEATTLE NO.

Central Link Light Rail Transit Project

Airport Link Environmental Assessment

APPENDIX D

Affected Parcels

Appendix D. Affected Parcels

Building and operating the Airport Link segment of the light-rail system requires acquiring property for right-of-way and other facilities and presumes displacing and relocating some of the existing uses. This appendix presents the likely property acquisitions based on the current conceptual designs. It is important to note that this is a preliminary list of acquisitions and should not be interpreted as the final determination regarding property acquisition. The list will be continually updated as the project design is further refined. There are two types of property acquisitions:

- A partial acquisition would acquire part of a parcel but would not dislocate the existing use.
- A full acquisition would acquire the full parcel and displace the current use. Full acquisitions include parcels that may not be fully acquired for the project but would be affected (due to loss of parking, access or other features) such that the existing use would be substantially impaired. This includes parcels that would be required for construction activities, although in some cases all or part of the parcels would be available for other use or redevelopment after construction is complete.

The following Table D-1 presents the likely acquisitions in Airport Link. In addition to the potential property acquisitions described, the project would also require subterranean, aerial, and other easements and use of public right-of-way.

Table D-1 Affected Parcel Information

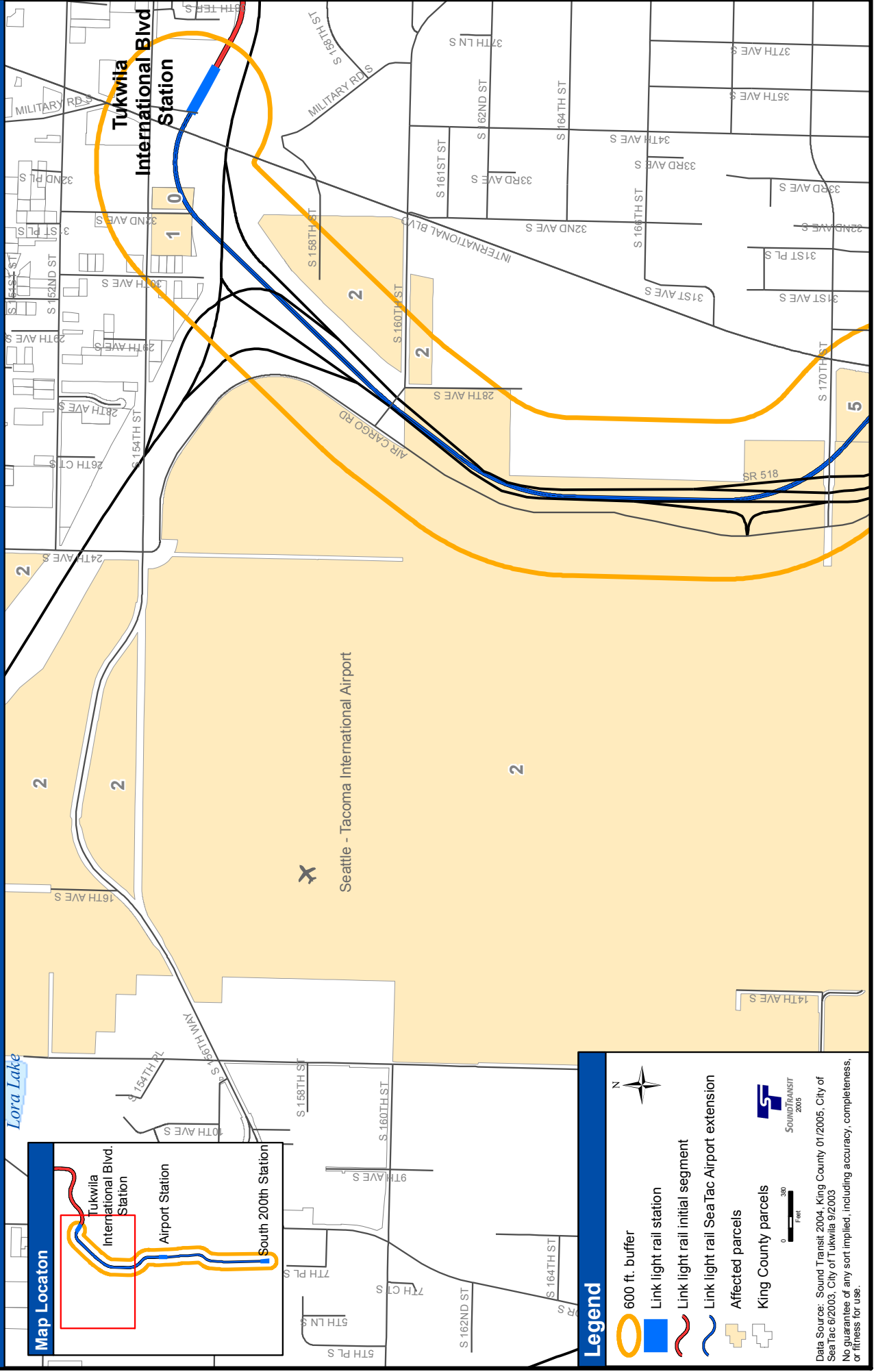
Map ID	Parcel ID	Property Name	Site Address
0	0043000405	Ajax Parking	3211 S. 154th Street
1	3842600139	Corinthian Apartments	3039 S 154th Street
2	2823049016	SR 518	SR 518
5	2823049053	Radisson Hotel	17001 International Blvd.
7	2823049049	Dollar Rent-A-Car	2810 S. 176th Street
8	1002000115	West Coast Gateway Hotel	18415 International Blvd.
8a	2823049095	Park and Fly lot	17400 International Boulevard
9	3323049165	Budget Parking	18445 Pacific Hwy S.
10	3323049071	Airport Plaza Hotel	18601 International Blvd.
11	3323049205	Liquor Store & Pizza Hut	18613 Pacific Hwy S
12	3323049059	La Quinta Inn	2824 S 188th St
13	3323049181	AM-PM Mini Market	2806 S 188th St
14	3323049081	Parking (Auto)	2803 S 188th St
15	0422049136	SFR Airport Buy Out	2606 S 200th St
16	0422049079	National Car Rental	19707 Pacific Hwy S
17	0422049097	Parking for Air Way Car Sales	19815 Pacific Hwy S
18	0422049059	Thrifty Car Rental	19815 Pacific Hwy S

Table D-1 Affected Parcel Information (continued)

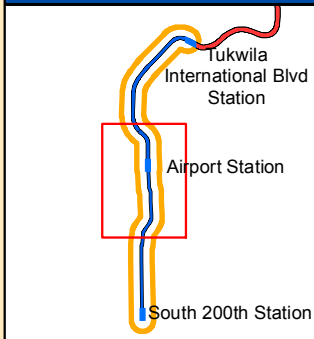
Map ID	Parcel ID	Property Name	Site Address
19	0422049062	U Lock It Storage	19825 Pacific Hwy S
20	0422049063	Puget Power Substation	19845 28th Ave S
21	0422049253	Vacant Land	19900 27th Ave S
22	0422049189	Chevron Oil	19923 Pacific Hwy S
23	0422049148	KC Water District 75	19863 28th Ave S
24	0422049179	SFR	2702 S 200th St
25	0422049239	Vacant Land	2708 S 200th St
26	0422049238	SFR	19908 27th Ave S
27	3445000035	Commercial Parking Lot (Former Storage Shed)	20025 28th Ave S
28	3445000030	Tavern, Laundry & Retail	20001 Pacific Hwy S
29	3445000060	Commercial Parking Lot	20055 28th Ave S
30	3445000033	Commercial Parking Lot (Former Auto Body Shop & Residence)	20005 28th Ave S
31	3445000032	Commercial Parking Lot	2709 S 200th St
32	3445000042	Commercial Parking Lot	2625 S 200th St
33	3445000036	Commercial Parking Lot	20015 S 200th St
34	3445000014	Atami Restaurant	20023 Pacific Hwy S
35	3445000070	Seatac Skyway Inn	20045 International Blvd.
36	3445000040	SFR	2617 S 200th St
37	3445000041	Vacant (Former) SFR	2607 S 200th St

Airport Link (North Section)

Affected Parcels



(Middle Section)

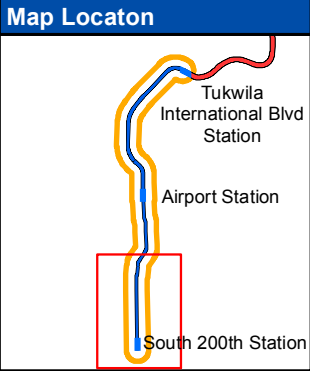


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(South Section)



South 200th Station

Seattle - Tacoma International Airport

Angle Lake

Legend

-
- 600 ft. buffer
 - Link light rail station
 - Link light rail initial segment
 - Link light rail SeaTac Airport extension
 - Affected parcels
 - King County parcels

0 300
Feet



Data Source: Sound Transit 2004, King County 01/2005, City of SeaTac 6/2003, City of Tukwila 9/2003

No guarantee of any sort implied, including accuracy, completeness, or fitness for use.

Central Link Light Rail Transit Project

Airport Link Environmental Assessment

APPENDIX E

Additional Transportation Tables

Appendix E. Transportation

Table E-1
Missing Sidewalk Sections in Airport Link Study Area

Roadway	From	To	Both Sides : B One Side : O
144th St.	Tukwila Int'l Blvd. 37th Ave.	37th Ave. Military Road	O B
146th St.	29th Ave.	46th Ave.	B
148th St.	24th Ave. Military Road Tukwila Int'l Blvd.	Military Road Tukwila Int'l Blvd. End of road	O B ¹ B
150th St.	24th Ave.	End of road	B
151st St.	30th Ave.	End of road	B
152nd St.	24th Ave. Tukwila Int'l Blvd.	Military Road 42nd St.	B B
154th St.	SR 518 29th Ave. 30th Place 38th Lane	29th Ave. 30th Place 38th Lane Southcenter Blvd.	B B O B
156th St.	44th Ave. End of road	47th Ave. Air Cargo Road	B B
158th St.	End of road Military Road	International Blvd. 44th Ave.	B B
160th St.	Air Cargo Road 34th Ave. Military Road 42nd Ave.	International Blvd. Military Road 42nd Ave. 45th Ave.	O O B O
161st St.	32nd Ave. End of road	34th Ave. Air Cargo Road	B B
162nd St.	32nd Ave.	Military Road	B
164th St.	32nd Ave.	Military Road	B
166th St.	167th St.	40th Ave.	B
167th St.	International Blvd.	166th St.	B
168th St.	34th Ave.	37th Ave.	B
171st St.	29th Ave.	International Blvd.	B
172nd St.	31st Ave.	40th Ave.	B
173rd St.	32nd Ave.	40th Ave.	B
175th St.	32nd Ave.	40th Ave.	B
194th St.	28th St.	International Blvd.	B

Table E-1
Missing Sidewalk Sections in Airport Link Study Area (continued)

Roadway	From	To	Both Sides : B One Side : O
196th St.	End of road	28th St.	B
198th St.	Military Road	32nd St.	B
200th St.	20th Ave.	28th Ave.	B
201st St.	End of road	32nd Ave.	B
202nd St.	35th Ave.	32nd Ave.	B
203rd St.	32nd Ave.	End of road	B
204th St.	End of road	End of road	B
205th St.	25th Lane	28th Ave.	B
208th St.	24th Ave.	32nd Lane	B
24th Ave.	End of Road	208th St.	B
25th Place	204th St.	End of road	B
26th Place	205th St.	End of road	B
27th Ave.	End of road	End of road	B
27th Place	205th St.	205th Place	B
29th Ave.	46th St.	End of road	B
	End of road	154th St.	B
29th Ave.	170th St.	171st St.	B
30th Ave.	150th St.	152nd St.	B
	End of road	176th St.	B
30th Place	152nd St.	End of road	B
31st Ave.	End of road	End of road	B
31st Place	End of road	End of road	B
32nd Ave.	Tukwila Int'l Blvd.	End of road	B
	End of road	Bow Lake Dr	B
	204th Place	198th St.	B
32nd Place	148th St.	150th St.	B
	150th St.	152nd St.	B
33rd Ave.	166th St.	End of road	B
34th Ave.	Military Road	33rd Ave.	B
34th Ave.	160th St.	170th St.	B
	175th St.	176th St.	B
	198th St.	End of road	B
	203rd St.	End of road	B

Table E-1
Missing Sidewalk Sections in Airport Link Study Area (continued)

Roadway	From	To	Both Sides : B One Side : O
35th Ave.	154th St.	End of road	B
	166th St.	End of road	B
	166th	170th St.	B
	198th St.	200th St.	B
	200th St.	202nd St.	B
35th Lane	198th St.	End of road	B
35th St.	146th 154th St.	End of road	B
		End of road	B
37th Ave.	166th St.	172nd St.	B
	End of road	198th St.	B
37th Place	152nd St.	End of road	B
38th Lane	154th St.	End of road	B
38th Place	158th St.	159th St.	B
	End of road	198th St.	B
39th Ave.	End of road	198th St.	B
39th Place	End of road	198th St.	B
40th Ave.	152nd St.	38th Lane	B
	158th St.	159th St.	B
42nd Ave.	152nd St.	160th St.	B
44th Ave.	158th St.	156th St.	B
Air Cargo Road	SR 518	170th St.	B
Air Cargo Road	161st St.	End of road	B
Bow Lake Dr.	End of road	32nd Ave.	B
International Blvd.	170th St.	176th St.	O
	200th St.	208th St.	B ²
Military Road	End of road	160th St.	B
	34th Ave.	160th St.	O
	32nd Ave.	Air Cargo Road	B
	144th St.	Tukwila Int'l Blvd.	B
	End of road	164th St.	B

Source: CH2MHill, July 1998

Notes: ¹ Sidewalk on this street segment is not continuous.

² Reconstruction is currently underway from S. 200th Street to S. 216th Street on International Boulevard includes sidewalks.

Table E-2
Transportation Improvement Projects Assumed in Place By 2015

Street	From	To	Widen	Sidewalk	Bike Lane
International Blvd	S. 200th St	S. 216th St	To 6 lanes (with median)	Yes	No
S. 154th St Relocation	24th Ave S.	Des Moines Mem. Dr	---	Yes	---
S. 160th Street	North Airport Ex.	Rental Car Facility	(new ramps)	---	---
34th Ave S	S. 160th St	S. 176th St	---	Yes	---
S. 192nd Street	33rd Ave S.	37th Ave S.	---	Yes	---
37th Ave S.	S. 188th St	S. 192nd St	---	Yes	---
S. 195th Street	International Blvd	28th/24th St	New 3 lane roadway	Yes ¹	---
Des Moines Mem. Dr		At S. 200th Street	Left turn lanes –all legs & right turn lane –east leg	---	---
40th Ave S.	S. 176th St	S. 166th St	To 36 feet	Yes	---
S. 154th Street	International Blvd	30th Ave S.	Yes	Yes	---
International Blvd	S. 152nd St	S. 154th St	Yes	Yes	---
Military Rd	S. 150th St	International Blvd	Yes	Yes	---
S. 152nd Street	International Blvd	30th Ave S.	Yes	Yes	---
30th Pl S.	S. 152nd St	S. 154th St	Yes	Yes	---
32nd Ave S.	S. 152nd St	S. 154th St	Yes	Yes	---
S. 208th Street	International Blvd	28th/24th Ave S.	To 3-5 lanes	Yes ¹	---
Des Moines Mem. Dr.	S. 128th St	City Limits	Yes	Yes	Yes
28th/24th Ave S.	S. 202nd St	S. 208th St	To 4-5 lanes	Yes	Yes
S. 200th Street	International Blvd	SR 509	To 3-5 lanes	Yes	Yes
S. 204th Street	International Blvd	34th Ave S.	Yes	Yes	---
32nd Ave S.	S. 200th St	S. 204th St	---	Yes	---

Source: City of SeaTac 2005-2014 Transportation Improvement Program

Note ¹ Sidewalks assumed as part of improvements.

Central Link Light Rail Transit Project
Airport Link Environmental Assessment

APPENDIX F
Environmental Justice

Appendix F. Environmental Justice

F.1 INTRODUCTION

This analysis was prepared in compliance with Presidential Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated February 11, 1994, and the Department of Transportation's Order to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order). The purpose of this analysis is to provide information on opportunities provided to minority and low-income populations to participate in the project planning process for the Airport Link Project, and to determine whether Airport Link would result in direct and disproportionately high and adverse effects on minority and/or low-income populations.

F.2 REGULATORY FRAMEWORK

Executive Order 12898, issued by President Clinton in 1994, provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations." In the accompanying memorandum, President Clinton urged federal agencies to incorporate environmental justice principles into analyses prepared under NEPA and emphasized the importance of public participation in the NEPA process.

In response to Executive Order, the U.S. Department of Transportation issued the DOT Order, which outlines how environmental justice analyses should be performed and how transportation project decisions should be made to avoid direct and disproportionately high and adverse effects on minority and low-income populations. The DOT Order requires agencies to: (1) explicitly consider human health and environmental effects related to transportation projects that may have a disproportionately high and adverse effect on minority or low-income populations; and (2) implement procedures to provide "meaningful opportunities for public involvement" by members of those populations during project planning and development. The DOT Order further provides that, "In making determinations regarding disproportionately high and adverse effects on minority and low-income populations, mitigation and enhancements measures that will be taken and all offsetting benefits to the affected minority and low-income populations may be taken into account, as well as the design, comparative impacts, and the relevant number of similar existing system elements in non-minority and non-low-income areas." (DOT 1997).

F.3 METHODOLOGY AND APPROACH

In accordance with the DOT Order, this environmental justice analysis summarizes the efforts that Sound Transit has made to involve minority and low-income populations in the development of the Airport Link project. This summary is contained in Section F.5, below. In addition, it analyzes, relying principally on the information developed in the environmental review process and accompanying technical reports, whether the Airport Link project would result in direct and disproportionately high and adverse effects, taking into account proposed mitigation measures and project benefits as appropriate. This analysis is contained in Section F.6. The demographics of the population residing in the vicinity of the Airport Link alternatives were identified to provide an appropriate context both for the public involvement efforts and the analysis of potential effects on minority and low-income populations. This demographic information is set forth in Section F.4, below. This environmental justice analysis supplements the environmental justice analysis performed for the original project, which was included as Appendix G to the 1999 Central Link Final EIS.

F.4 PROJECT AREA DEMOGRAPHICS

To establish context for this environmental justice analysis, the race and income characteristics of the population in the vicinity of the Airport Link project alternatives were reviewed. 2000 Census data were used to identify the relative concentrations of minority and low-income individuals in these areas. Race data were analyzed at the census block level and income data were analyzed at the census block group level, as income data is not available at the block level. Maps depicting the distribution of minority and low-income individuals in the vicinity of the project alternatives are shown in Figures F-1 through F-3. The areas in the vicinity of the project alternatives shown in these figures represent the areas that are likely to receive the greatest impact, and the greatest benefit from the Airport Link project.

As shown on Figure F-1, most of the census blocks in the vicinity of the project alternatives have minority population percentages in the 0- to 20-percent range and the 20- to 40-percent range, although some isolated census blocks are in the 40- to 100-percent range. However, noticeable aggregations of minority individuals adjacent to the project corridor can be seen in most of the Airport Link neighborhood areas. It should be noted that the census blocks with the highest percentages of minorities have a very small number of people living in them. For example, census blocks 281.00.2007, 284.02.4007, 285.4002, and 288.01.2003 (those in the 80 to 100 percent range) have five people or less living in them.

As shown on Figure F-2, Hispanic representation in the census blocks adjacent to the project alternatives is quite low, with most census blocks reporting Hispanic population percentages in the 0- to 20-percent range. Two blocks in the Angle Lake neighborhood have higher percentages of Hispanics. However, one of the blocks only has 2 residents and the other only has one resident.

As shown on Figure F-3, most of the census block groups in the vicinity of the project alternatives have low-income population percentages in the 0- to 25-percent range. One block group has 29 percent of its population in poverty. This block group includes the airport and supporting facilities. The residential area of this block group is east of International Boulevard.

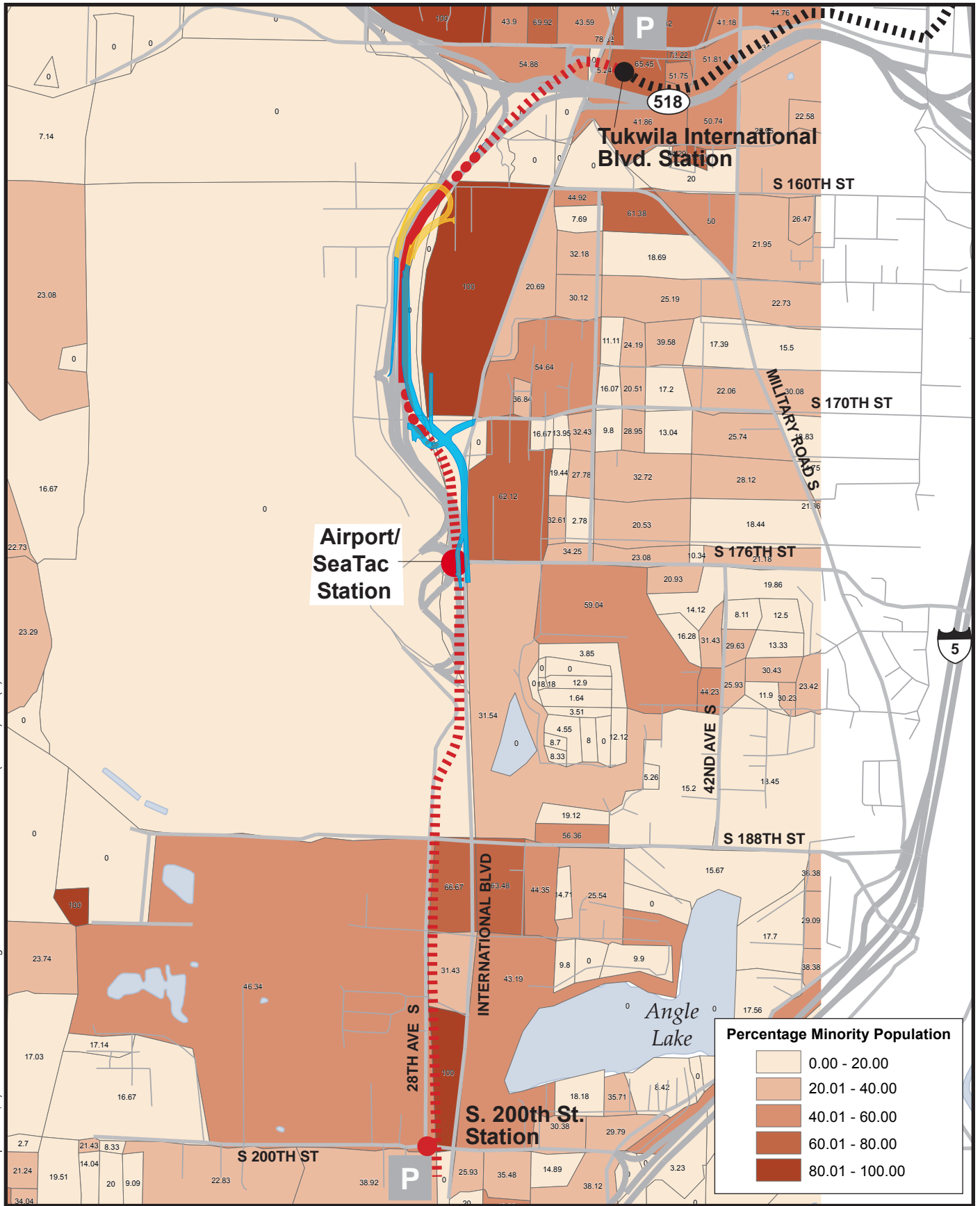
The 1999 Central Link FEIS used 1990 Census data to describe project area demographics. Figures G-6 and G-12 of the 1999 Central Link FEIS depict the demographics in the Airport Link project area. A comparison of the Central Link FEIS figures and Figures F-1 and F-3 in this EA indicates that the percentages of minority and low-income populations have increased in the Airport Link project area. In 1990, five block groups in the Airport Link project area had greater than 34 percent minority population. In 2000, almost 30 block groups had greater than 40 percent minority population. In 1990, no census block groups in the Airport Link project area had greater than 21 percent of the population in poverty. In 2000, one census block group had 29 percent of the population in poverty.

F.5 OUTREACH TO MINORITY AND LOW-INCOME POPULATIONS

Both the Executive Order and the DOT Order provide that federal agencies shall ensure meaningful participation of minority and low-income populations in the decision-making process. The implementation of appropriate public outreach activities and the provision of opportunities for public involvement is a key component of compliance with the Executive and DOT Orders.

Throughout the project development of the Central Link Project, which includes Airport Link, the Initial Segment, and North Link, Sound Transit has undertaken numerous public outreach efforts, many of which have been specifically targeted at minority and low-income populations. These activities are summarized below.

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SOUND TRANSIT

0 1,850
FEET



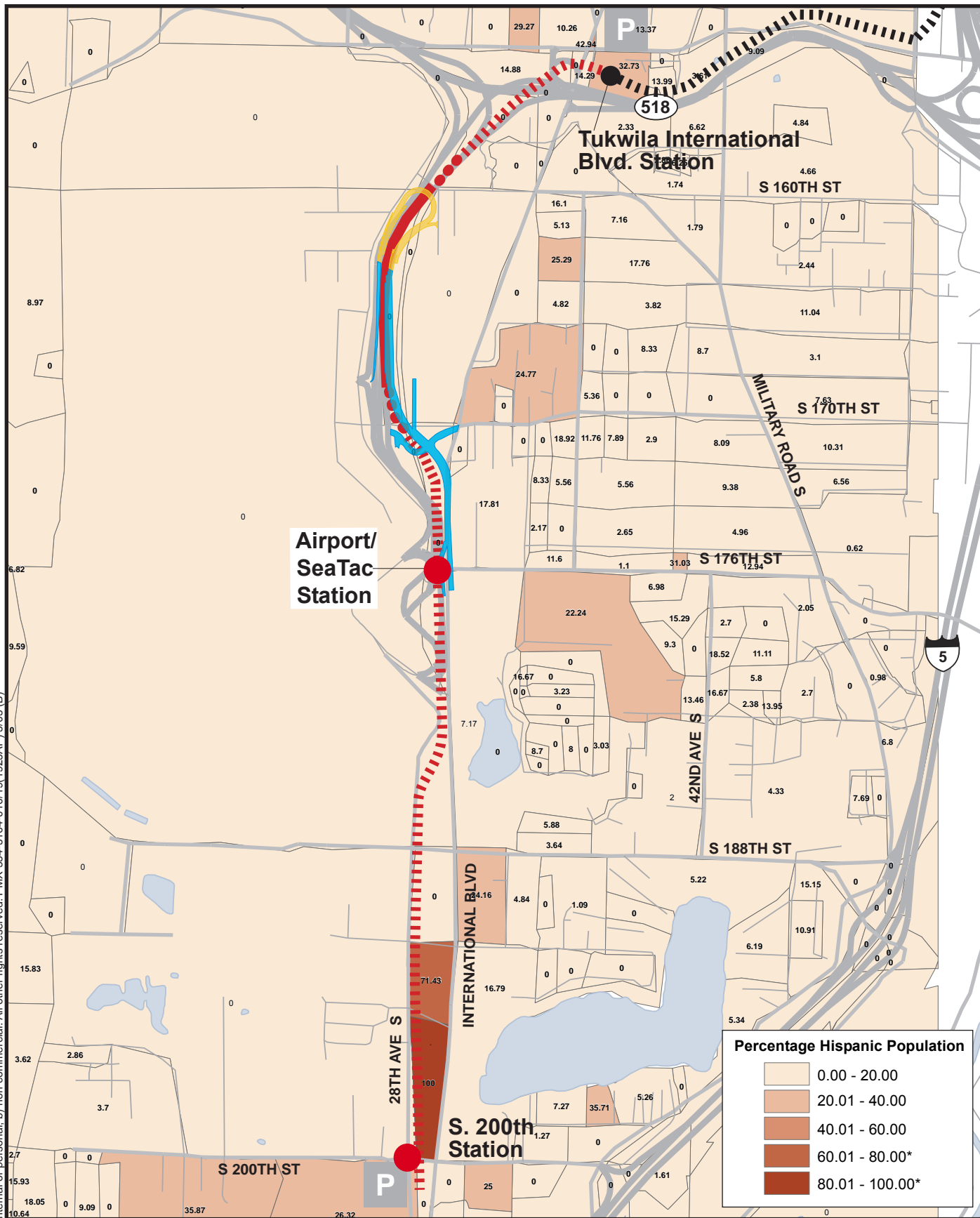
- Tunnel
- Elevated
- At Grade
- Retained Cut-Fill
- Station

- P Park and Ride
- Related Roadway Improvements
- S. 160th Street Loop Ramp Project

Note: The Washington Memorial Park Cemetery, Doug Fox, and Airport properties, which show high percentages of Minorities, have very few people living in them. Race data is shown at census block level.

**Figure F-1
Minority Population**

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Note: In the two block groups that show a high Hispanic population, one block group has only 2 people living in it, and the other only has one person living in it. Race data is shown at census block level.

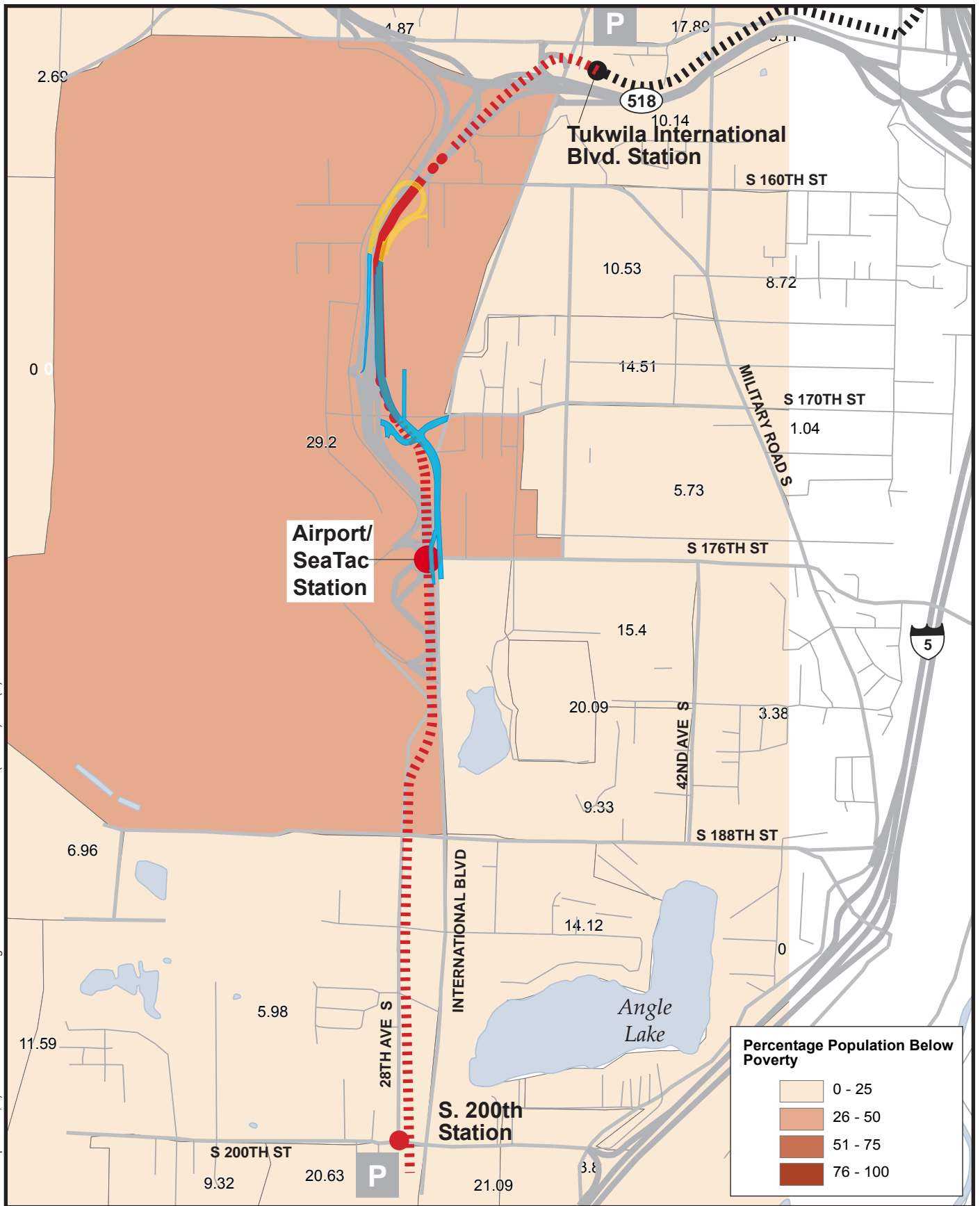
Figure F-2
Hispanic Population



- Elevated
- At Grade
- Retained Cut-Fill
- Station

- P** Park and Ride
- Related Roadway Improvements
- S. 160th Street Loop Ramp Project

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Note: The one block group that has 29 percent poverty includes the Airport and supporting facilities. The residential area of this block group is east of International Blvd. Income data is only available at the block group level.

Figure F-3
Low Income



0 1,850
FEET



- Elevated
- At Grade
- Retained Cut-Fill
- Station

- P** Park and Ride
- Related Roadway Improvements
- S. 160th Street Loop Ramp Project

F.5.1 Outreach from 1997 through December 2004

The EIS process that began in 1997 for the Central Link Project included alternatives that are now known as the Airport Link project from S. 154th Street in Tukwila to S. 200th Street in SeaTac; therefore, the scoping and open house meetings held in November and December 1997 directly addressed the Airport Link project area, although new route options have since been introduced. These meetings were advertised via mailers sent to residences and businesses within approximately one-half mile of the proposed routes based on postal carrier routes. These carrier routes include areas of high minority concentrations as well as low-income areas according to the demographic data described above. In addition to two scoping meetings in November and December 1997, Sound Transit held five other scoping meetings in various locations along the Central Link corridor and five public hearings on the Draft EIS in various locations along the Central Link corridor, including SeaTac and Tukwila. Thousands of other meetings were held with interested groups. Since 1991, Sound Transit has held approximately 3,392 meetings of neighborhood, community, and interest groups. Detailed information on public outreach efforts are listed in the following documents:

- 1999 Central Link FEIS Appendix B
- Tukwila Freeway Route Final SEIS Appendix C
- North Link Draft SEIS Appendix C

The Central Link FEIS (Appendix I) provides additional details regarding other minority and low-income outreach efforts. Environmental justice appendices are also provided in the Tukwila Freeway Route and North Link SEIS's. Several examples of outreach efforts to low-income and minority populations from the Central Link EIS include the following:

- Sound Transit translators took comments in the following languages at four meetings (December 1997):
 - 12/10 Chinese
 - 12/11 Amharic, Vietnamese, Tigrinya
 - 12/13 Amharic, Vietnamese, Tigrinya
 - 12/13 Spanish
- Sound Transit staff conducted two roundtables and 34 telephone interviews with community leaders from traditionally under-represented communities. The purpose was to get their feedback on the impact of transit projects, their ideas on expanding outreach efforts, and to recruit volunteers to help disseminate Sound Transit information to their communities (June 1998).
- Sound Transit mailed translated informational materials to more than 200 key community, neighborhood, and business leaders (August 1998).
- Sound Transit staff translated “Connecting the Puget Sound with Link Light Rail” (a project overview) into the following languages: Chinese, Vietnamese, Korean, Laotian, Cambodian, Amharic, Tigrinya, Russian, and Spanish (March 1998).
- Sound Transit created telephone “hotlines” in Chinese, Vietnamese, Spanish, and Amharic to provide callers with information in their native language and with an opportunity to leave comments and suggestions. Callers received responses to their comments and suggestions in that same language (started August 1998).

- Sound Transit staff participated in the following ethnic and foreign language talk-radio shows:
 - *Finoteselam*, Ethiopian/Amharic (August, 1998)
 - *Bert & Babot*, Tagalog/English (August, 1998)
 - *KSUH Radio Hankook*, Korean (April, 1999)
- Sound Transit translated and published information in ethnic and non-English language newspapers (August and October 1998).
- Sound Transit translated a summary of the findings of the Draft EIS into Vietnamese (November 1998).
- Sound Transit produced a general information piece on light rail in Somali, Oromo, Spanish, Chinese, Laotian, Vietnamese, Cambodian, Tigrinya, Amharic, Korean, and Braille.

Sound Transit has sought to remove barriers to effective communication with non-English speaking community members. To this end, Sound Transit maintains real-time translation services in over 150 languages in order to provide immediate project information and answers to questions from non-English speakers. Under this program, non-English speaking callers are connected with an interpreter who helps the caller find and communicate with the appropriate staff person. Sound Transit also provides interpreter services upon request at public and other community meetings. During the period from 2000 through 2004, Sound Transit provided approximately 12 Airport Link project updates at meetings of numerous community groups and organizations within the Airport Link project area.

Sound Transit has had extensive, ongoing coordination with the Muckleshoot, Suquamish, and Duwamish Tribes with respect to the Central Link project, including Airport Link. The only identified issue of tribal interest is the area of moderate probability for archaeological resources west of Bow Lake. Consultation with the Tribes has mainly consisted of letter correspondence. A detailed description of consultation with the Tribes is in the Historic and Prehistoric Archaeological Sites FEIS Technical Report (page 11). Since that document was issued, letter correspondence concerning the Initial Segment has continued. More recently, Sound Transit sent a letter (via FTA) to the Tribes telling them of the Airport Link project and EA and asking them to continue to participate as a consulting party. The letter included a project description, map, and schedule.

F.5.2 Outreach from January 2005 through Project Completion

Sound Transit is committed to the continued implementation of public involvement opportunities in the environmental review and planning processes for the Airport Link project. The public was invited to a conceptual design open house that took place on March 3, 2005 from 6:00 to 8:00 PM at SeaTac City Hall. Approximately 80 people attended. The public was invited through the following means:

- Postcards were sent to the following: all addresses within a half mile of the alignment, Airport Link mailing list, elected officials, Citizen Oversight Panel, Sound Transit Board, South County Transportation Board, environmental leaders, and other key stakeholders.
- Display ads were placed in the following publications: South King County Journal, Seattle Times, Highline Times, NW Asian Weekly, and the Facts minority newspapers.
- Emails were sent to the Port of Seattle's electronic mailing list for Airport projects.
- Fliers were posted at key community locations: SeaTac City Hall, Foster Library, Valley View Library, and North SeaTac Park Community Center.

Sound Transit will continue to provide on-call interpretation services for individuals who call in with questions or information requests, interpreter services at public meetings as requested, and notification of those services on project mailings in various languages. Meeting places will be ADA and transit accessible.

A public hearing on the Airport Link EA, located at SeaTac City Hall, provides the public an opportunity to comment on the EA. In addition to the methods listed above, the hearing will be advertised in the following additional ways:

- Posters at key locations near station sites.
- Mailing of EA to recipients of 1999 Central Link FEIS and Tukwila Freeway Route SEIS.

Future planned public involvement opportunities targeted at minority and low-income populations include the following:

- Provide agency and project-specific information to key community organizations that serve the minority and/or low-income populations prevalent in the areas to be served directly by the Airport Link project and likely to be impacted by the project.
- Maintain consistent contacts with key community organizations that serve the non-English speaking populations in the Airport Link project area and provide agency and project-specific information to these organizations.

F.6 PROJECT IMPACTS AND MITIGATION

The DOT Order requires agencies to explicitly consider human health and environmental effects related to transportation projects that may have a disproportionately high and adverse effect on minority or low-income populations. Under the DOT Order, mitigation and enhancement measures may also be considered. Table F-1 below briefly summarizes the impacts identified in the 1999 Central Link FEIS and Airport Link EA analyses as well as proposed mitigation measures. As summarized below, most of the impacts associated with Airport Link would be similar to or less than those associated with the original project. Chapter 3 of this EA contains complete discussions of project impacts and proposed mitigation.

As detailed in the 1999 Central Link FEIS and Airport Link EA and summarized above in Table F-1, many of the impacts associated with the Airport Link project are limited in scope. Other impacts would be mitigated through the implementation of effective mitigation measures. The project would not, therefore, result in direct and disproportionately high and adverse effects under the Executive and DOT Orders.

Table F-1
Impacts and Mitigation Summary

Element of the Environment	Airport Link Impact Summary	Mitigation Summary
Transportation	<ul style="list-style-type: none"> Improved transit travel times, reliability and convenience. Potential hide and ride impacts. Loss of on-street parking spaces. One intersection (S. 200th/International Boulevard) with worsened level of service, requiring mitigation to reduce delays. Airport Link and original project were found to have similar impacts on intersection operations. 	<ul style="list-style-type: none"> Parking management measures to address “hide-and-ride” parking. Lengthened turn pocket or other intersection improvement at S. 200th/International Boulevard. Localized changes due to the development of the light rail project and the displacement of existing uses. Impacts to land use would be similar to the original project.
Land Use and Economics	<ul style="list-style-type: none"> Supports development; consistent with local land use plans and regional growth management plans. * An estimated ten businesses and 112 employees could be displaced. 	<ul style="list-style-type: none"> Residents and businesses displaced by the project would receive compensation and relocation assistance in accordance with the provisions of Sound Transit’s adopted Real Estate Property Acquisition and Relocation Policy, Procedures, and Guidelines.
Acquisitions, Displacements, and Relocation	<ul style="list-style-type: none"> 16 full property acquisitions (includes 3 single-family residential properties, 4 vacant properties, and 6 surface parking lots), and 20 partial acquisitions. Original project required 14 full acquisitions (includes 4 vacant properties), and 47 partial acquisitions. 	<ul style="list-style-type: none"> Residents and businesses displaced by the project would receive compensation and relocation assistance in accordance with the provisions of Sound Transit’s adopted Real Estate Property Acquisition and Relocation Policy, Procedures, and Guidelines.
Neighborhoods and Populations	<ul style="list-style-type: none"> Consistent with existing and planned development. Improved neighborhood connectivity and personal mobility. Some displaced residents and businesses (see above). Impacts to neighborhoods and populations would be similar to original project and would be low. 	<ul style="list-style-type: none"> Implementation of proposed mitigation measures for displacements, traffic and parking, noise, and visual quality would help minimize potential negative impacts to neighborhoods.
Visual Resources and Aesthetics	<ul style="list-style-type: none"> Elevated structures would be a new element in the visual setting. Removal of trees and vegetation. Impacts to visual resources and aesthetics would be similar to original project and would be low. 	<ul style="list-style-type: none"> In some areas, trees and vegetation would be replaced.
Air Quality	<ul style="list-style-type: none"> No new violations of Federal air quality standards. Slight decrease in regional air emissions. Impacts to air quality would be similar to original project. 	<ul style="list-style-type: none"> No mitigation is required or proposed.
Noise and Vibration	<ul style="list-style-type: none"> Airport Link would create noise impacts for apartments in the southeastern section of the Corinthian complex, for clusters of residences near S. 192nd Street and near the S. 200th park-and-ride and the Hampton Inn swimming pool. 	<ul style="list-style-type: none"> Installation of noise walls.

Table F-1
Impacts and Mitigation Summary (continued)

Element of the Environment	Airport Link Impact Summary	Mitigation Summary
Ecosystems	<ul style="list-style-type: none"> • Removal of vegetation, and increased impervious surfaces. No direct loss of critical habitat. • Impacts to ecosystems would be similar to original project. 	<ul style="list-style-type: none"> • Preservation of trees in construction staging areas where appropriate. • Removed trees and vegetation would be replanted where appropriate. • Implementation of water quality BMPs and stormwater management facilities.
Water Resources	<ul style="list-style-type: none"> • Minor increase in impervious surface from above-ground facilities. • New PGIS square footage would be created by Airport link due to the roadway realignments north of the Airport/SeaTac Station. New non-PGIS would also increase due to elevated guideways, walkways, and station development. • South of the Airport/SeaTac Station, Airport link would have the same amount of impervious surface as the original project. 	<ul style="list-style-type: none"> • Implementation of stormwater detention and water quality treatment to meet Ecology requirements. • Implement water quality BMPs and construct stormwater detention facilities as required.
Energy	<ul style="list-style-type: none"> • Slight decrease in energy demand through decreased automobile use. • Slight increase in electrical energy demand to power the light rail system. • Airport Link would remain within the range of energy effects previously analyzed in the original project. 	<ul style="list-style-type: none"> • No mitigation is required or proposed.
Geology and Soils	<ul style="list-style-type: none"> • Little or no potential for landslide or inherent soil erosion hazards. Avoids mapped liquefaction zones. • Impacts geology and soils would be similar to original project. 	<ul style="list-style-type: none"> • Measures to address geologic conditions would be incorporated into the project design. No additional mitigation is required or proposed.
Hazardous Materials	<ul style="list-style-type: none"> • Both Airport Link and the original project have a total of 25 sites of highest concern along their alignment. Original project includes updates of latest available site information 	<ul style="list-style-type: none"> • Avoid contaminated sites or portions of contaminated sites if possible. • Clearly identify properties left with residual contamination in documentation sent to Ecology. • Perform cleanup or containment during construction, and handle materials in accordance with state and federal regulations.
Electromagnetic Fields	<ul style="list-style-type: none"> • No electromagnetic field impacts are expected under Airport Link or the original project. 	<ul style="list-style-type: none"> • No mitigation is required or proposed.
Public Services	<ul style="list-style-type: none"> • Demand for fire and emergency medical services and law enforcement would increase slightly. • Impacts to public services would be similar to original project. 	<ul style="list-style-type: none"> • Develop a system safety and security program as part of emergency management plan and training plan. • Light rail stations and parking structures would be designed and operated with safety and security as a key concern.

Table F-1
Impacts and Mitigation Summary (continued)

Element of the Environment	Airport Link Impact Summary	Mitigation Summary
Utilities	<ul style="list-style-type: none"> No long-term impacts to natural gas, electricity, telephone and telecommunications, water, wastewater, or solid waste collection and disposal services are expected. Impacts to utilities would be similar to original project. 	<ul style="list-style-type: none"> Sound Transit will protect Seattle Public Utilities' 60-inch watermain where it interfaces with the light rail alignment and coordinate with SPU during construction. The route is adjacent to but would not adversely affect an existing power substation. Other than coordination and communication of operational activities with utility providers, no additional mitigation is required or proposed.
Historic and Archaeological Resources	<ul style="list-style-type: none"> No historic resources directly affected by the project. Passes through one area of moderate probability area for archaeological resources. 	<ul style="list-style-type: none"> None required for Historic Resources. Pre-construction monitoring and monitoring during construction of archaeological resources.
Parklands	<ul style="list-style-type: none"> None identified. Park and recreational resources impacted by the original project would no longer be affected. 	<ul style="list-style-type: none"> None required.
Construction	<ul style="list-style-type: none"> Temporary street closures, traffic detours, and loss of parking and increased truck traffic would affect residents, businesses, and public service providers. Temporary neighborhood, business and residential disruption from proximity to construction activities, including construction traffic, noise, vibration, air quality, and visual impacts. Vibration poses minor risk of structural damage. Other impacts include the temporary disruption of utilities, and water quality and ecosystems impacts related to erosion and stormwater. Light rail construction would occur in low to moderate probability areas for archaeological resources. Construction impacts would be similar to original project. 	<ul style="list-style-type: none"> Detailed traffic plans would be finalized in close coordination with City of SeaTac, Port of Seattle, WSDOT, King County Metro, local public service and utility providers, and other affected agencies and organizations. Incorporate BMPs into construction plans and design documents. Vibration monitoring of activities that may produce vibration levels at or above 0.5 inches-per-second whenever there are structures located near the construction activity. Potential to restrict activities to daytime hours and minimize peak period activity. Preconstruction testing and monitoring during construction to prevent damage to or loss of archaeological resources that may be encountered. Noise mitigation could include limiting the hours of activities that produce the highest noise levels. Noise barriers or shielding could be used around equipment in some locations

F.7 PROJECT BENEFITS

Under the DOT Order, a proposed transportation project's offsetting benefits to the affected minority and low-income populations may be taken into account when determining whether direct and disproportionately high and adverse effects on minority and low-income populations will result. The substantial benefits associated with the Airport Link project that would accrue to minority and low-income residents of the Airport Link project area are summarized below. These benefits further support the conclusion that the Airport Link project would not result in direct and disproportionately high and adverse effects under the Executive and DOT Orders. Sound Transit plans to build Airport Link in segments. The Airport/SeaTac Station is being designed to operate as an interim southern terminus until construction of the line continues to S. 200th Street. A terminus at the Airport/SeaTac Station would

provide benefits to low-income and minority populations, and it would have fewer environmental impacts than the complete Central Link light rail project with a southern terminus at the S. 200th Station. However, the highest level of benefits from improved mobility would occur with the full length project. Both scenarios are being analyzed in this EA.

F.7.1 Improved Access to Transit

The populations residing near the Airport Link station areas were examined to determine the distribution of increased access to transit benefits to minority and low-income residents. The demographic makeup of ridership was estimated using the demographics of these nearby areas, which generally consisted of those areas located within roughly one-half mile of the stations (using the same methods as described on page G-31 of the Central Link FEIS). Residents of these areas would have the highest improved access to transit benefit due to their close proximity to the stations. These estimates were based on a GIS extraction of U.S. Census data for blocks and block groups within each station study area. The population data for individuals living within each block and block group “cluster” around each station were then aggregated to create a demographic profile of the total population that would receive this improved access to transit benefit. This analysis was conducted for the No-Build alternative and for the Airport Link alternative. The original project would have about the same benefits to populations, because the adopted project stations are in the same vicinity as the Airport Link stations. Table F-2 below summarizes the results of the improved access to transit benefit analysis for the Airport Link project.

Table F-2
Access to Transit Benefits of Select Airport Link Alternatives and Distribution to Minority and Low-Income Populations

Alternative	Total Number of Airport Link Stations	2000 Total Airport Link Population w/ Access ¹	2000 Airport Link Minority Population w/ Access ²	Minority Access (%) ¹	2000 Airport Link Low-income Population w/ Access ³	Low-Income Access (%)
Northgate to Airport	1	9,480	3,624	38%	1,224	13%
Northgate to S. 200th	2	19,170	7,125	37%	2,228	12%

¹ Residents with access to the light rail system.

² Source: Census Year 2000 Block demographic data for Airport Link clusters.

³ Source: Census Year 2000 Block Group income data for Airport Link clusters.

As shown in Table F-2, the total number of Airport Link project area residents with access to light rail stations would be 9,480 with the Airport/SeaTac Station interim terminus and 19,170 with the S. 200th Station terminus. Because of the increase in minority and low-income populations in the Airport Link project area, the number of minority residents and low-income receiving these benefits would increase. Minority and low-income populations, therefore, would achieve improved access to transit benefits under the build alternative. As previously reviewed in the 1999 Central Link FEIS (Appendix G, pages G-25 to 26), both minority and low-income populations tend to make greater use of transit service than other groups, suggesting that transit service improvements are generally more important to these communities than the population at-large.

F.7.2 Transit Travel Time Savings

Overall transit service with Airport Link, including travel time, transfers, speed and reliability, and coverage area and structure, is expected to be similar to what was reported in the 1999 Central Link FEIS for the original project as there has been no substantial change to the Airport Link alignment. Compared

to the No-Build alternative, Link riders boarding or departing at the Airport/SeaTac Station would avoid transfers to an airport bus shuttle at the Tukwila International Boulevard Station, reducing their overall travel time by up to five minutes.

F.7.3 Improved Access to Employment

Decreased transit travel times mean riders can travel longer distances in the same amount of time. As travel time decreases as a result of this project, access to new employment opportunities becomes available. This is particularly important for transit-dependent persons who cannot take the bus to many areas due to extended trip times or inconvenient bus routes. Because the Airport Link project would improve travel times over the No-Build alternative, light rail patrons may seek employment in areas previously considered too far away. Similarly, people may benefit from having access to the services provided at some of these work sites (e.g., schooling or healthcare) that are easier to reach as a result of the project. Overall access to employment is expected to be more beneficial compared to what was reported in the 1999 Central Link FEIS environmental justice analysis.

F.8 CONCLUSION

As described above, the Airport Link project, like the original project, would not result in high and adverse effects under the Executive and DOT Orders. Many project impacts are limited in scope and others would be mitigated through the implementation of effective mitigation measures. Further analysis of the race and income characteristics of impacted populations, therefore, is not warranted.

Moreover, the Airport Link project would provide substantial benefits to minority and low-income residents in the areas surrounding the light rail stations. As described in Section F.4, the percentage of low-income and minority populations has increased in the project area. Project benefits to minority and low-income populations include improved access to transit, transit travel time savings, and improved access to employment. These project benefits further support the conclusion that this project would not result in direct and disproportionately high and adverse effects on minority or low-income populations under the Executive and DOT Orders.

F.9 REFERENCES

DOT (United States Department of Transportation). 1997. DOT Order on Environmental Justice. Available at: http://www.fhwa.dot.gov/environment/ejustice/dot_ord.htm.

Central Link Light Rail Transit Project
Airport Link Environmental Assessment

APPENDIX G
***Hazardous Materials –
Documented and Potential Release Sites***

Appendix G. Hazardous Materials Background Information

Facilities or properties that have released hazardous materials or waste to the environment, or that manage hazardous materials or waste in significant quantities, are required to report these activities to both federal and state regulatory agencies. The first step in evaluating a potential for hazardous materials impacts involves reviewing current databases maintained by these agencies.

Project staff identified and classified sites according to whether (1) hazardous material releases to the environment had been reported, or (2) hazardous materials have been managed with no release reported. Staff also mapped all known sites within 600 feet of the proposed alignment and used on-line assessor information (City of Seattle 2004) to verify site location. A distance of 600 feet was selected for initial screening purposes to identify potential and documented hazardous material sites on and adjacent to the proposed alignment. Expected distances of groundwater contaminant migration from source release points were based on professional judgment. For those properties to be acquired by Sound Transit, a more comprehensive search would be performed.

Site activities and features indicated on the maps were classified as having a potential for release associated with petroleum products, dry cleaner solvents, or a generic “other” designation.

Hazardous materials may be classified into different categories based on the laws and regulations that define their characteristics and use. These classifications include the following:

- Hazardous waste
- Dangerous waste
- Hazardous substances
- Toxic substances

The U.S. Environmental Protection Agency (U.S. EPA) and Ecology maintain databases to track sites with potential and confirmed releases of hazardous materials to the environment, and they monitor facilities that manage hazardous materials as part of their operations.

The Federal Resource Conservation and Recovery Act (RCRA) defines what is meant by hazardous waste. In Washington State, Ecology has been authorized by the U.S. EPA to implement most of the RCRA program. Authorization was based on state dangerous waste regulations that are consistent with and at least as stringent as the federal requirements. The U.S. EPA tracks hazardous waste management at individual facilities throughout the state based on notification requirements and records that define the magnitude of waste generated (i.e., small or large quantity), defines the type of handling performed (i.e., treatment, storage, or disposal), and identifies whether a release to the environment has occurred. Ecology tracks facilities based on required registration of underground storage tanks; it also maintains an inventory of solid waste facilities and landfill sites.

Nationally, the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), also known as Superfund, defines hazardous substances. Ecology operates a parallel program in Washington State under the Model Toxics Control Act (MTCA). Both programs are designed and administered to provide appropriate responses to the release of hazardous substances to the environment. MTCA also addresses releases of petroleum products not covered under federal statutes. The U.S. EPA tracks sites based on reported potential or actual releases to the environment, emergency response notifications, and cleanup progress at major release sites. Ecology tracks the same types of sites, as well as petroleum releases.

Toxic substances are a subset of hazardous substances that are also regulated by the federal Toxic Substances Control Act (TSCA). TSCA was adopted so that all new chemical substances and existing chemicals put to new uses, other than pesticides, could be evaluated for health and environmental effects. Additional controls governing disposal, beyond CERCLA and RCRA, have been specifically applied to polychlorinated biphenyls (PCBs). TSCA sites are tracked by the U.S. EPA.

SITE CATEGORIES

Hazardous materials sites in the project area fall into two categories: documented release sites and potential release sites.

Documented Release Sites

Documented releases to the environment, identified in regulatory agency site files, directly affect soil and groundwater. Releases to soil generally are limited in lateral extent and can result in potential impacts when found directly in the proposed light rail right-of-way. Releases to groundwater tend to extend further away from the area of origin and can potentially result in impacts even when the source is located beyond the proposed right-of-way.

Potential Release Sites

A potential for release is based on the activity currently or historically performed on the property. Current activity evident from visual observation (e.g., junk yard) was based on reconnaissance conducted for alternative F2.3 in the 1999 Central Link FEIS. Some activities may be registered with regulatory agencies.

KNOWN AND POTENTIAL HAZARDOUS MATERIALS SITES

The analysis identified sites within 600 feet of the proposed alignment with a reported or potential release of hazardous materials to the environment. Sites designated with a release to soil only also may have impacted groundwater, but may not have been investigated.

Potential release sites were identified based on the following categories:

- Reported current activities (e.g., hazardous waste generator)
- Reported current features (e.g., registered underground storage tanks)
- Visually identified activity or feature

Sites with potential for releases have not been characterized and may or may not have soil and/or groundwater contamination.

Sites of highest concern include documented release sites located either on properties planned for displacement or directly on the alignment, as well as those with releases to groundwater adjacent to elevated sections. These sites present the potential for long-term impacts, as well as the potential to be impacted by construction.

Airport Link – S 154th to S 200th

Site ID	Site Name	Address	Type of Site	Location on Alignment
Documented Release Sites				
31/35	Seatac Express, Inc. / Aviation Facilities	16125 Air Cargo Road Sea-Tac Airport	UST, LUST, petroleum release to soil	Approximately 200' WNW of alignment
41	Delta Air Lines Seattle	16745 Air Cargo Road Sea-Tac Airport	UST, LUST, RCRA generator, petroleum release to soil and ground water	Approximately 450' W of alignment
42	SeaTac United Fuel Farm/ Continental Fuel Farm	47 27 09 N latitude 122 18 09 W longitude Sea-Tac Airport	UST, LUST, petroleum release to soil and ground water	Approximately 230' W of alignment
50/78	Northwest Airlines	SeaTac Airport/18601 28th Ave S	UST, LUST, RCRA generator, petroleum release to soil and ground water	Approximately 300' W of alignment
52	Tac Sea Motel	17024 Pacific Hwy S	RCRA generator, release of complex contaminants to soil and ground water (dry cleaners)	Approximately 320' NE of alignment
58.01	SeaTac Airport Fire Dept / SeaTac Pan Am	17205 Pacific Hwy S	UST, LUST, petroleum release to soil	Approximately 580' SW of alignment
58.02	Texaco #63-133-0040	17010 Pacific Hwy S	UST, LUST, RCRA generator, petroleum release to soil	Approximately 480' NE of alignment
64	Hertz Rent-a-Car	SeaTac Airport	LUST, petroleum release to soil and groundwater	Approximately 500' W of alignment
65	Unocal #4871	17606 Pacific Hwy S	UST, LUST, petroleum release to soil and groundwater	Approximately 200' E of alignment
67	Crawford Aviation	SeaTac Airport	UST, LUST, petroleum release to soil	Approximately 250' W of alignment
68.01	Budget Rent-a-Car of WA/OR / Valet Parking OPS	17808 International Blvd	UST, LUST, RCRA generator, petroleum release to soil and groundwater	Approximately 230' E of alignment
75	Budget Rent-a-Car of WA/OR	18445 Pacific Hwy S	UST, LUST, petroleum release to soil and groundwater	Approximately 120' E of alignment
76	Chevron USA Inc. 92259	18514 Pacific Hwy S	UST, LUST, RCRA generator, petroleum release to soil and groundwater	Approximately 120' E of alignment

Airport Link – S 154th to S 200th (continued)

Site ID	Site Name	Address	Type of Site	Location on Alignment
77	Puget Sound Energy	18470 Pacific Hwy S	UST, LUST, Petroleum release to soil	Approximately 110' E of alignment
80/82	Red Lion Inn / AGFA Corp. / Doubletree Inn	18740 Pacific Hwy S / S 188th Street & Pacific Hwy S	UST, LUST, RCRA generator, petroleum release to soil	Approximately 460' SE of alignment
81	SeaTac Alaska Air	18650 Alaska Service Road S	UST, LUST, petroleum release to soil and groundwater	Approximately 380' WNW of alignment
83	SeaTac Gasoline/Budget	2806 S 188th Street	UST, LUST, petroleum release to soil and groundwater	On alignment/Displacement
84	Exxon #7-3287 / Conoco Phillips	2841 S 188th Street	UST, LUST, petroleum release to soil and groundwater	Approximately 320' E of alignment
89	Marriott In-Flight Services	18850 28th Ave S	UST, LUST, petroleum release to soil	On alignment
90	Retail Bldg / Former Service Station	19019 - 19023 28th Ave S	UST, LUST, petroleum release to soil and groundwater	Approximately 50' W of alignment
92	Budget Rent a Car	19030 28th Ave S	UST, LUST, petroleum release to soil	On alignment
95	SeaTac Alaska Airlines / FLT OPS/Admin. Training Center / Alaska Airlines Print Shop	2651 S 192nd Street	UST, LUST, RCRA generator, petroleum release to soil	Approximately 420' E of alignment
103	Shop and Equipment Yard	19863 28th Ave S	UST, LUST, petroleum release to soil	On alignment/Displacement
104.01	Chevron USA Inc. SS 94411	19923 Pacific Hwy S	UST, LUST, petroleum release to soil	On alignment/Displacement
104.02	BP #11255	19924 Pacific Hwy S	UST, LUST, petroleum release to soil	Approximately 350' E of alignment
108	UHaul Co. of SeaTac	20024 Pacific Hwy S	UST, LUST, petroleum release to soil and groundwater	Approximately 310' ESE of alignment
902	Dollar Car Sales	17600 Pacific Hwy S	UST, LUST, petroleum release to soil	Approximately 170' E of alignment/Displacement
908	General Rent-a-Car	19840 Pacific Hwy S	UST, LUST, petroleum release to soil	Approximately 340' E of alignment
Potential Sites				
16	APS Services, Inc.	3515 S 154th Street	RCRA generator	Adjacent
17	Angel Lee Inc. / Ajax Rent-a-Car	3211 S 154th Street	UST	On alignment/Displacement

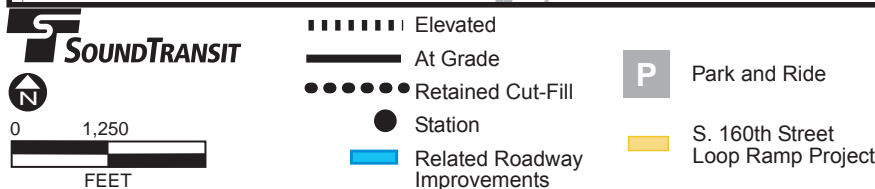
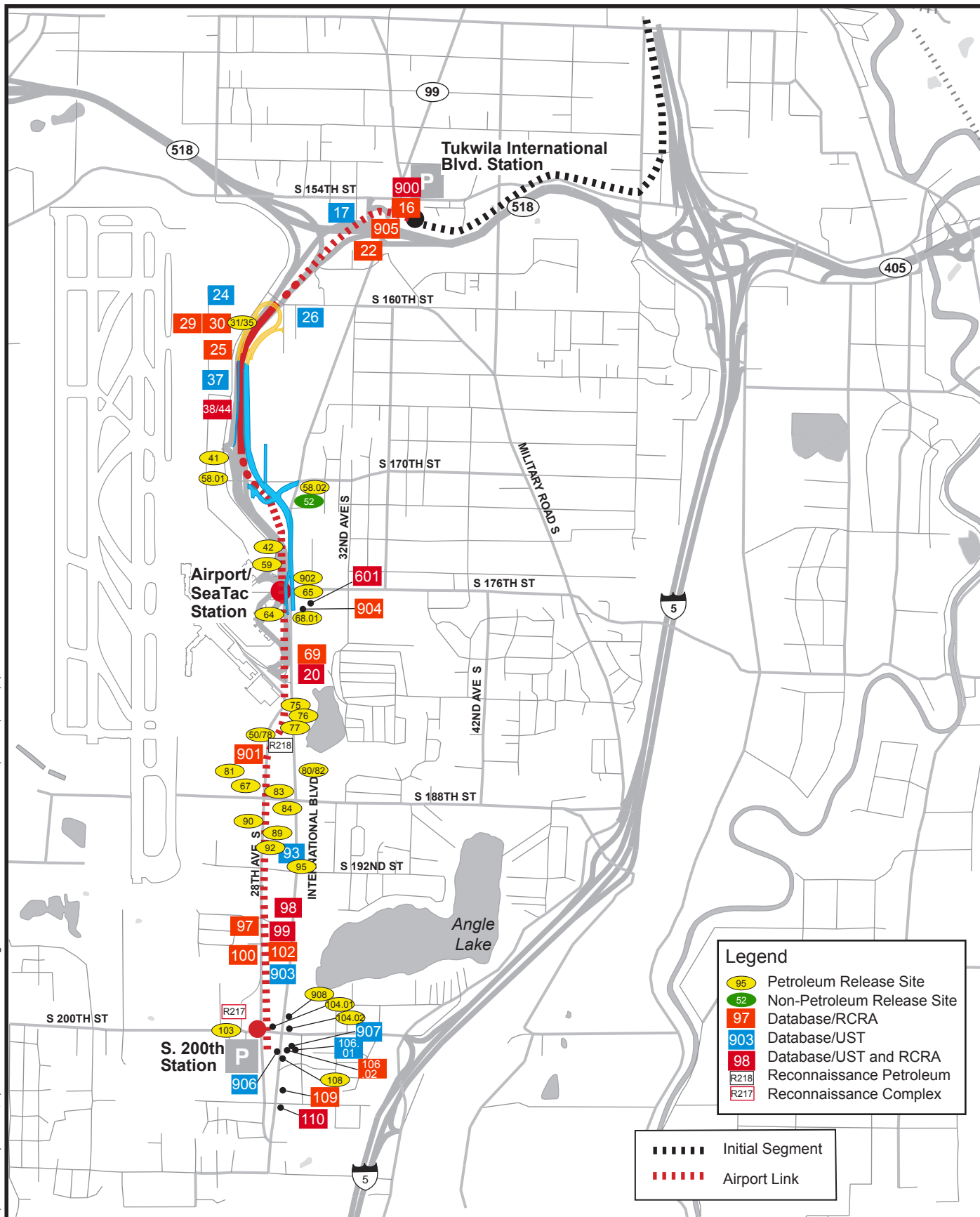
Airport Link – S 154th to S 200th (continued)

Site ID	Site Name	Address	Type of Site	Location on Alignment
20	Bering Marine Corp. / Knik Construction General Office / Kilroy Realty LP / Alaska Railbelt Main	18000 Pacific Hwy S (International Blvd)	UST, RCRA generator	Adjacent
22	Shuttle Park, Inc.	15667 Pacific Hwy S	RCRA generator	Adjacent
24	Federal Express Corp.	Sea-Tac Airport	UST	Adjacent
25	Airport Drayage Co.	16215 Air Cargo Road, Sea-Tac Airport	RCRA generator	Adjacent
26	Host	S 160th Street and Host Road S (28th Ave S)	UST	Adjacent
29	Federal Express Corp. Seattle 2	2446 / 2450 S 161st Street Sea-Tac Airport	RCRA generator	Adjacent
30	Emery World Wide ACF Co.	2625 S 161st Street Sea-Tac Airport	RCRA generator	Adjacent
37	Air Cargo Building	2600 S 165th Street Sea-Tac Airport	UST	Adjacent
38 / 44	U.S. Postal Service / USPS Air Mail Center	16601 Air Cargo Road Sea-Tac Airport	UST, RCRA generator	Adjacent
60/68.02	Alamo / National / SR Technics Palmdale Inc.	17801 International Blvd	UST, RCRA generator	On alignment
69	Boeing Advanced Systems	17930 Pacific Hwy S	RCRA generator	Adjacent
93	Rays Auto Sales & Service	19059 Pacific Hwy S	UST	Adjacent
97	Seattle Port Construction	19425 28th Ave S	RCRA generator	Adjacent
98	AAA Plaza / FAA	19415 Pacific Hwy S	UST, RCRA generator	Adjacent
99	Auto Sport Imports / Hong	19611 Pacific Hwy S	UST, RCRA generator	Adjacent
100	Seattle Christian School	19639 28th Ave S	RCRA generator	Adjacent
102	Airways Isuzu Truck Center	19815 Pacific Hwy S	RCRA generator	On alignment
106.01	City of Seatac Fire Service	2929 S 200th Street	UST	Adjacent
106.02	Seatac Custom Cleaners	20012 Pacific Hwy S	RCRA generator	Adjacent
109	Angle Lake Collision Center	20052 Pacific Hwy S	RCRA generator	Adjacent
110	Kenworth NW Inc.	20220 International Blvd	UST, RCRA generator	Adjacent
900	Arco Products #5515	15252 Pacific Hwy S	UST, RCRA generator	Adjacent

Airport Link – S 154th to S 200th (continued)

Site ID	Site Name	Address	Type of Site	Location on Alignment
901	Walbridge Aldinger Strand Hunt A Joint V	18753 28th Ave S	RCRA generator	Adjacent
903	National Car Rental System Inc.	19707 Pacific Hwy S	UST	On alignment/Displacement
904	Noritsu America Corp.	17620 Pacific Hwy S	RCRA generator	Adjacent
905	City of Tukwila / Pacific Hwy Bridge	SR 99, MP 23.3, Pacific Hwy Bridge	RCRA generator	Adjacent
906	Howard Peck / Superior Asphalt	20050 Pacific Hwy S	UST	Adjacent
907	7-11 #27742A	20008 Pacific Hwy S	UST	Adjacent
R217	Puget Power Substation	19935 25th Ave S	Reconnaissance Complex	On alignment/Displacement
R218	SeaTac Airport Fuel	18360 Air Cargo Rd	Reconnaissance Petroleum	On alignment

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**Figure G-1
Documented and Potential
Hazardous Material Release Sites**

Central Link Light Rail Transit Project

Airport Link Environmental Assessment

APPENDIX H

Link Operating Plan Summary

Appendix H. Link Operating Plan Summary

The Operating Plan is the schedule and number of trains Sound Transit expects to operate on opening day for Airport Link and the changes expected for service in 2030. This Operating Plan was included in the assumptions of the transportation forecasts and noise and vibration analysis in 2015 and 2030.

The operating plan used in the 2015 ridership modeling work includes:

- Peak periods (6:00 – 8:30 AM; 3:00 – 6:30 PM): 3 to 4-car trains every 6 minutes.
- Midday (8:30 AM – 3:00 PM) and early evening (6:30 PM – 10:00 PM): 3-car trains with 7.5 minute headways north of Rainier Beach Station.
- Early morning (5:00 – 6:00 AM) and late evening (10:00 PM – 1:00 AM): 3-car trains with 15 minute headways serving the entire line.
- On Sunday: light rail service would operate from 6:00 AM – 12:00 AM on 3-car trains. From 6:00 – 8:00 AM there would be 15 minute headways, from 8:00 AM – 10:00 PM there would be 10 minute headways, and from 10:00 PM – 12:00 AM there would be 15 minute headways.

The operating plan used in the 2030 ridership modeling work includes:

- Peak periods (6:00 – 8:30 AM; 3:00 – 6:30 PM): 3 to 4-car trains every 5 minutes between Northgate and Airport/SeaTac Station.
- Midday (8:30 AM – 3:00 PM) and early evening (6:30 PM – 10:00 PM): 4-car trains with 7.5-minute headways north of Rainier Beach Station and 15-minute headways south of Rainier Beach Station.
- Early morning (5:00 – 6:00 AM) and late evening (10:00 PM – 1:00 AM): 4-car trains with 15 minute headways serving the entire line.
- On Sunday, service would operate 3-car trains from 6:00 AM through 12:00 AM. From 6:00 AM to 8:00 AM, there would be 15-minute headways, from 8:00 AM to 10 PM there would be 10 minute headways, and from 10:00 PM to 1:00 AM, there would be 15-minute headways.

Table H-1 lists the days and hours when each service pattern would operate. Service would be more specifically tailored to the transition periods (for example, between early morning and peak hour).

Table H-1
Assumed Link Operating Schedule

	From	To	Number of Hours	Service Type
Weekday	5:00 AM	6:00 AM	1.0	Early/late
	6:00 AM	8:30 AM	2.5	Peak
	8:30 AM	3:00 PM	7.0	Base
	3:00 PM	6:30 PM	3.0	Peak
	6:30 PM	10:00 PM	3.5	Base
	10:00 PM	1:00 AM	3.0	Early/late
Saturday	5:00 AM	8:00 AM	3.0	Early/late
	8:00 AM	10:00 PM	10.0	Base
	6:00 PM	1:00 AM	7.0	Early/late
Sunday	6:00 AM	8:00 AM	2.0	Early/late
	8:00 AM	10:00 PM	14.0	Base
	10:00 PM	12:00 AM	3.0	Early/late

Source: Revised Operating Plan for Phase 1; PSTC.

Central Link Light Rail Transit Project

Airport Link Environmental Assessment

APPENDIX I

Air Quality General Conformity Calculations

Table I-1
Total Tons Per Project

	CO	VOC	NO_x	SO_x	PM
Equipment Emissions	1.06	0.25	3.33	0.42	0.23
Demolition Emissions					1.05
Hauling Emissions	0.88	0.18	3.00	NA	0.12
Site Grading Fugitive Dust Emissions					11.88
Worker Commute Emissions	19.13	1.91	1.90	NA	NA
Asphalt Emissions		0.01703			
Totals	21.07	2.35	8.23	0.42	13.28

**Table I-2
Equipment Emissions**

NONROAD 2004 Engine Rating	Equipment Type	Days/ Week	Days/ Month	Total Months	Hours Per Day	Total Days/ Year	Emission Factors Ton/Day					Emissions (Tons)				
							CO	VOC	NOx	SOx	PM10	CO	ROC	NOx	SOx	PM10
165 hp Grader	Grader	6	26	3	4	39	0.00018	0.00004	0.00055	0.00009	0.00004	0.01	0.00	0.02	0.00	0.00
165 hp Grader	Grader	6	26	8	8	208	0.00018	0.00004	0.00055	0.00009	0.00004	0.04	0.01	0.11	0.02	0.01
169 hp Paver	Asphalt Paver	6	26	8	8	208	0.00015	0.00004	0.00047	0.00007	0.00004	0.03	0.01	0.10	0.01	0.01
125 hp Roller	Compactor	6	26	2	4	26	0.00015	0.00003	0.00043	0.00007	0.00003	0.00	0.00	0.01	0.00	0.00
125 hp Roller	Compactor	6	26	11	8	286	0.00015	0.00003	0.00043	0.00007	0.00003	0.04	0.01	0.12	0.02	0.01
290 hp Excavator	Excavating Equipment	6	26	19	8	494	0.00028	0.00007	0.00094	0.00017	0.00007	0.14	0.03	0.46	0.08	0.03
250 hp Crusher	Grinder Tub	6	26	9	4	117	0.00014	0.00005	0.00074	0.00011	0.00004	0.02	0.01	0.09	0.01	0.00
230 hp Dozer	Dozer	6	26	11	8	286	0.00025	0.00006	0.00085	0.00015	0.00006	0.07	0.02	0.24	0.04	0.02
300 hp Crane	Crane	6	26	23	8	598	0.00043	0.00009	0.00157	0.00020	0.00008	0.26	0.05	0.94	0.12	0.05
177 hp Cement Mixer	Concrete Pumper Truck	6	26	33	8	858	0.00046	0.00011	0.00120	0.00010	0.00010	0.39	0.09	1.03	0.09	0.09
200 hp Drill Rig	Drill Rig	6	26	15	8	390	0.00016	0.00004	0.00051	0.00005	0.00004	0.06	0.02	0.20	0.02	0.02
Total Emission Totals (Tons)												1.06	0.25	3.33	0.42	0.23

Notes: Equipment emission factors from EPA NONROAD2004 Model, Run March 22, 2005.

Equipment count information provided by Jim Soukup/HNTB.

Total Days/yr value accounts for multiple pieces of equipment operating simultaneously in same year.

**Table I-3
Demolition Emissions**

Building Number/ Name	Cubic Feet of Building	PM10 Emissions (lbs/yr)
Radisson	4,567,000	1918.1
Bank of America	170,000	71.4
Value Parking	80,000	33.6
Bridge 5, 6, 7	32,779	82.6
Total Lbs.		2105.7
Total Tons		1.05

Note: PM10 (Pounds) = (0.00042 pounds of PM10/feet3) * (Building Width(ft) * Building Length (ft) * Building Height (ft))

Hauling Emissions

Hauling Emissions (lbs) = Vehicle Miles Traveled*grams pollutant/mile *pound/454 grams

**Table I-4
On-Road Hauling Emissions**

	Number of Worker Trips	Miles Traveled Per day	Emissions (TONS)				
			CO	NOx	VOC	PM10	Sox
Hauling	15502	20	0.88	3.00	0.18	0.12	NA

Note: Haul trips sum total for all projects, assumed to occur in one year (J. Soukup, HNTB)

**Table I-5
On-Road Hauling Vehicle Emission Factors (GR/Mile)**

Calendar Year	Average Speed*	CO	NOx	VOC	PM10	Sox
2007	30	2.585	8.78	0.519	0.3431	Not Calculated

Note: Vehicle emission factor source: Modeled Emission factors from MOBILE6.2, King County Original Area I/M, Run March 11, 2005
Worker trips sum total for all projects, assumed to occur in one year (J. Soukup, HNTB)

**Table I-6
Site Grading Fugitive Dust Emissions**

	PM Tons/Acres Per Month	Acres Worked	Months	Emissions (PM)
Average Conditions	0.11	9	12	11.88

Notes: Algorithm: Acres of Area Graded *Months of Grading* EF = Emissions from Grading
Emission factor from the URBEMIS2002 Guide. EF developed by the Midwest Research Institute
Total area to be graded = 9 Acres which is largely associated with the paving area between the electrical substation and, up to and including the realigned S. 170th St., but also includes the roadway embankment, parking garage access grading, and the minor grading for paving adjacent to northbound and southbound NAE (J. Soukup, HNTB)

**Table I-7
Worker Commute Emissions**

	Number of Worker Trips	Miles Traveled Per day	Emissions (TONS)				
			CO	NO _x	VOC	PM ₁₀	Sox
Worker Commute	33768	24	19.13	1.90	1.91	NA	NA

Note: By project: # workers x days/wk x wk/month x month/yr

**Table I-8
Worker Commute Vehicle Emission Factors (GR/Mile)**

Calendar Year	Average Speed*	CO	NO _x	VOC	PM ₁₀	Sox
2007	30	21.409	2.123	2.139	Not Calculated	Not Calculated

Note: Vehicle emission factor source: Modeled Emission factors from MOBILE6.2, King County Original Area I/M, Run March 11, 2005

**Table I-9
Asphalt Emissions**

Acres to be paved	13	
Emissions Factor *	2.62	lbs VOC/acre
Emissions from Asphalt Paving	34.06	lbs VOC
	0.01703	Tons VOC

Notes: Vehicle emission factor source: Modeled Emission factors from MOBILE6.2, King County Original Area I/M, Run March 11, 2005

* VOC, Volatile Organic Chemicals, emissions were calculated using the ROC, Raw Organic Chemicals, emissions factors.

Emission Factor from SMAQMD manual (Sacramento Metropolitan Air Quality District 1994) and URBEMIS2002 Users' Guide

Total acres Paved = 13 acres, based on the full limits of the new access road to SeaTac Value Park & Cemetery (J. Soukup, HNTB)

Central Link Light Rail Transit Project

Airport Link Environmental Assessment

APPENDIX J

Agency Coordination

Appendix J Agency Coordination

A variety of agencies have played important roles throughout the light rail study process beginning with the Central Link Environmental Impact Statement (EIS) and continuing through this Airport Link Environmental Assessment (EA). The agencies listed below in Table J-1 were contacted or their databases or publications were used for data collection, resource identification, determination of regulatory compliance requirements, and/or development of methodology. Agencies also provided additional information and evaluation throughout the analysis process. Direct contacts were typically regarding compliance with specific regulatory issues with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service (now the National Oceanic and Atmospheric Administration Fisheries), and the Washington State Historic Preservation Office; this information is reflected in correspondence with these agencies.

In addition, Sound Transit also coordinated with the other government agencies and jurisdictions, including the Port of Seattle (a co-lead agency for this EA), City of SeaTac, City of Tukwila, King County, and Washington State Department of Transportation, and established an ongoing coordination group to provide project updates, presentations and other technical information throughout the development of the EA. These parties also participated in reviews of preliminary technical reports and impacts analysis. Sound Transit also conducted meetings and presentations directly with the agencies on specialized topics of interest.

Table J-1 State and Federal Agencies

Agencies	Topics
<i>Federal</i>	
U.S. Army Corps of Engineers	Source data: wetlands
Federal Aviation Administration	All topics
Federal Highway Administration	Wetlands; traffic; air quality; energy; acquisitions, displacements, and relocations; highway improvement plans; noise and vibration; capital cost estimates
Federal Emergency Management Agency	Source data: flooding
U.S. Department of the Interior Geological Survey	Source data: geology and soils
U.S. Environmental Protection Agency	Methodologies
U.S. Fish and Wildlife Service	Threatened and endangered species
U.S. Coast Guard	Navigation
Bonneville Power Administration	Source data: energy
National Marine Fisheries Service	Threatened and endangered species
Northwest Power Planning Council	Source data: energy
Advisory Council on Historic Preservation	Historic and archaeological resources
<i>State</i>	
Interagency Committee for Outdoor Recreation	Parklands
Department of Fish and Wildlife	Threatened and endangered species, fish and wildlife, wetlands
Department of Ecology	Hazardous materials, geology and soils
Department of Transportation	Highway improvements plans; traffic; wetlands; hazardous materials; energy; acquisitions, displacements and relocations; historic and archaeological resources; capital cost estimates; geology and soils; noise and vibration; water quality
Department of Natural Resources	Threatened and endangered species, geology and soils

Table J-1 State and Federal Agencies (continued)

Agencies	Topics
Office of Archaeology and Historic Preservation	Historic and archaeological resources
<i>Local/Regional Agencies</i>	
City of SeaTac, City of Tukwila, and King County	Wetlands; water quality; fish and wildlife; land use and economic activity; historic and archaeological resources; acquisitions, displacements, and relocations; transportation plans; traffic; transit; noise and vibration; visual and aesthetic resources; historic and archaeological resources; electromagnetic fields; neighborhoods and populations; parklands; geology and soils
Port of Seattle	Co-lead agency; all topics
Puget Sound Clean Air Agency	Air quality
Puget Sound Regional Council	Regional travel; land use and economic activity; neighborhoods, populations, and employment
Tribes	Cultural resources, fisheries